A STUDY OF POPULATION PATTERN AND CHANGE AND ECONOMIC DEVELOPMENT IN MALAYSIA

by

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A Graduation Exercise presented to the University of Malaya in part fulfilment towards the Degree of Bachelor of Economics with Honours in Applied Economics

1969/70

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SYNOPSIS

The objective of this exercise is to provide a detailed and well balanced account of certain important aspects of the Malaysian population.

Chapter I deals with various characteristics of the Malaysian population. Several important conclusions are derived from the discussion in this chapter. For example, the analysis reveals that Malaysia still has a population growing at the rate of about 3% a year and projection data provided shows that this rate is likely to persist and even increase in the near future. The data showing the increasing disparity between fertility and mortality rates further supports this conclusion. Age distribution data reveals that the Malaysian population is concentrated in the younger age groups. This is bound to lead to socio-economic problem such as a high dependency ratio.

The economic characteristics of the population are dealt with in Chapter II. One significant point to note is that the population in the working age group has declined in the decade after 1957 whereas that in the younger age groups has increased. This is in conformity with the conclusion arrived at in Chapter I that the population is concentrated more in the younger age groups. Yet another important conclusion is that the importance of the agricultural sector in the decade since 1957 has declined. This is accompanied by an increase in the tertiary and the secondary sectors. Nevertheless, agriculture still plays the dorminant role in the Malaysian economy and is likely to provide the necessary resources for economic development.

Chapter III deals with the relationship between population growth and economic development. Several theories are discussed here. These include the Classical Theory and The Theory of Demographic Transition. An attempt is made to apply these theories to the Malaysian context and the implication arrived at is that these theories cannot be applied in their entirety as far as Malaysian conditions are concerned. A factual evaluation reveals that population growth does have an effect on economic development.

A discussion of the relationship between population increase and the standard of living is undertaken in Chapter IV. The dissertation reveals how population growth is related to the standard of living through its effects on the dependency ratio, through the volume of capital necessary to maintain workers at the same level of efficiency as before the increase in population, and

through excessive density of agricultural population on land. It is difficult to differentiate between the effects of population growth on the standard of living and on economic growth. As such some economic effects of population increase are also found in this chapter.

Chapter V shows that despite the evils of an increasing population illustrated in chapters III and IV, the government has not made any serious attempt to check this menace. The efforts undertaken so far are grossly inadequate and practical suggestions to remedy the situation are forwarded. A cost-benefit analysis is also attempted to illustrate the necessity of a dynamic population policy. Calculations reveal that astounding returns to population control can be obtained at a minimum cost whereas the same investment in traditional items such as factories and infra-structure will yield only a fraction of the benefits derived from adopting a population control programme.

Several difficulties were encountered in presenting this exercise. For example, it was not possible to secure a breakdown of the population data in terms of say sex and age for both East and West Malaysia for one particular date. As such the analysis has to be undertaken by considering West Malaysia, Sabah and Sarawak by turn. Another difficulty is that it was not possible to get the latest figures on certain aspects of the population such as age distribution. As such, estimates provided by the statistics department had to be used. If data provided in the 1957 Census (for West Malaysia) had been considered, the analysis undertaken would have been outdated. Similar difficulties regarding the availability of data were encountered especially in the first two chapters.

Finally, it should be noted that any reference made to an underdeveloped country in this exercise refers to one with a per capita income of less than M$1500 per annum.

ACKNOWLEDGEMENT

The author would like to express his gratitude to Mr. Paul Chan Tuck Hoong for his advice and guidance in the presentation of this exercise.

CHAPTER I

POPULATION PATTERN AND POPULATION CHANGE IN MALAYSIA

1.1 Introduction

This chapter aims at providing a concise account of the pattern of the Malaysian population and the changes undergone by it during the last few decades. It should be noted that the discussion is not limited to West Malaysia alone but also includes the population characteristics of East Malaysia to give a more balanced account in this dissertation.

The facts given in the following sections are intended to provide the background to subsequent discussion in other chapters.

1.2 Population Distribution

Malaysia with an area of 128,430 square miles, had by 1967, a total population of 10,148,800 and a density of about 79.5 persons per square mile. This figure, however, is of little significance. Reference to Table 1.1 shows that there exists an uneven distribution of population not only between East and West Malaysia[1] but also within the country.

70.5% of Malaysia's population is in the Western Malaya region of West Malaysia which comprises more than 50% of West Malaysia's but only 20.1% of Malaysia's land area. Here, the population density is as high as two hundred and fifty-seven persons to the square mile. East Malaya, on the other hand, has about 19% of the total Malaysian land area and a density of 60.7 persons to the square mile which is smaller than the West Malaysian but bigger than the East Malaysian figure.

In East Malaysia, Sarawak, with a larger land area and a bigger population than Sabah, has a smaller population density than the latter. Sarawak, moreover, has a smaller density than the average East Malaysian density of 19.2 persons to the square mile. In both these states, the population is made up of small

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[1] East Malaysia in this exercise refers to the States of Sabah and Sarawak. West Malaysia refers to the States of the former Federation of Malaya.

TABLE 1.1

MALAYSIA:-

POPULATION DISTRIBUTION AS AT
31ST DECEMBER, 1967

Administrative Area	(a) Area in Square Miles	% of Total Area	(b) Population	% of Total Population	(c) Persons/ Square Mile
West Malaysia	50,700	39.5	8,655,299	85.3	170.7
West Malaya	26,027(d)	20.3	7,156,716	70.5	257.0
East Malaya	24,673(e)	19.2	1,498,583	14.8	60.7
East Malaysia	77,730	60.5	1,493,501	14.7	19.2
Sabah	29,388	22.8	590,660	5.8	20.7
Sarawak	48,340	37.6	902,841	8.9	18.7
Malaysia	128,430	100.0	10,148,800	100.0	79.5

Source

Computed from:

(a) The Reports on the censuses of population of Sabah (1960), Sarawak (1960) and the Federation of Malaya (1957).

(b) The Department of Statistics (refer to Appendix I).

Note: (c) Calculated by means of formula $\frac{Pi}{ai}$, Pi - number of people in political sub-division; ai - number of square miles in each division.

(d) Refers to figures for Perlis, Penang and Province Wellesley, Kedah, Perak, Selangor, Negri Sembilan, Malacca.

(e) Refers to figures for Kelantan, Trengganu, Pahang.

scattered groups confined to the coastal areas.

The inter-state West Malaysian population distribution is given in map 1.1. It is apparent that states with a density of less than 200 persons to the square mile are found in the eastern portion of the peninsula whereas states with greater population concentrations form a narrow belt along the western coast extending from Johore in the South to the Thai-Malaysian border in the North. Perak, Selangor and Johore with 19.1%, 16.5% and 15.2% of the West Malaysian population respectively had the largest population percentages in 1967.

The reasons for the high concentration in these three states are historical and economic. Selangor and Perak owe their high population densities to the growth of the tin and rubber industries. The establishment of Kuala Lumpur as the centre of the West Malaysian railway network also helped in the case of Selangor. In Johore, the growth of the pineapple, palm-oil and coconut played an important role.

A study of the distribution of population in terms of ethnic groups leads to the following group classification of the West Malaysian States:[2]

(1) Penang and Selangor,
(2) Negri Sembilan, Perak and Pahang,
(3) Kedah, Perlis, Kelantan, Trengganu, Johore and Malacca.

This order of classification results in territories of largely urban Chinese population being on top (1) territories with mixed populations (2) in the middle and states with a predominantly Malay population (3) at the bottom.

In general, where rice growing is an important industry as in Kelantan, Trengganu, Perlis and Central and North Kedah, the Malays form the majority of the population. For example, data in Appendix I reveals that in Kelantan and Trengganu, more than 90% of the total population in the two states consists of Malays.

The areas in which the Chinese predominate are those which have undergone considerable economic development. About 90% of the Chinese are found to the West of the Main Range from Penang to Johore where most of the large towns, tin mines and rubber estates are concentrated. But the centre of gravity of the Chinese population is much further south than the centre of gravity of the Malays, half of whom live in the northern third of the country.

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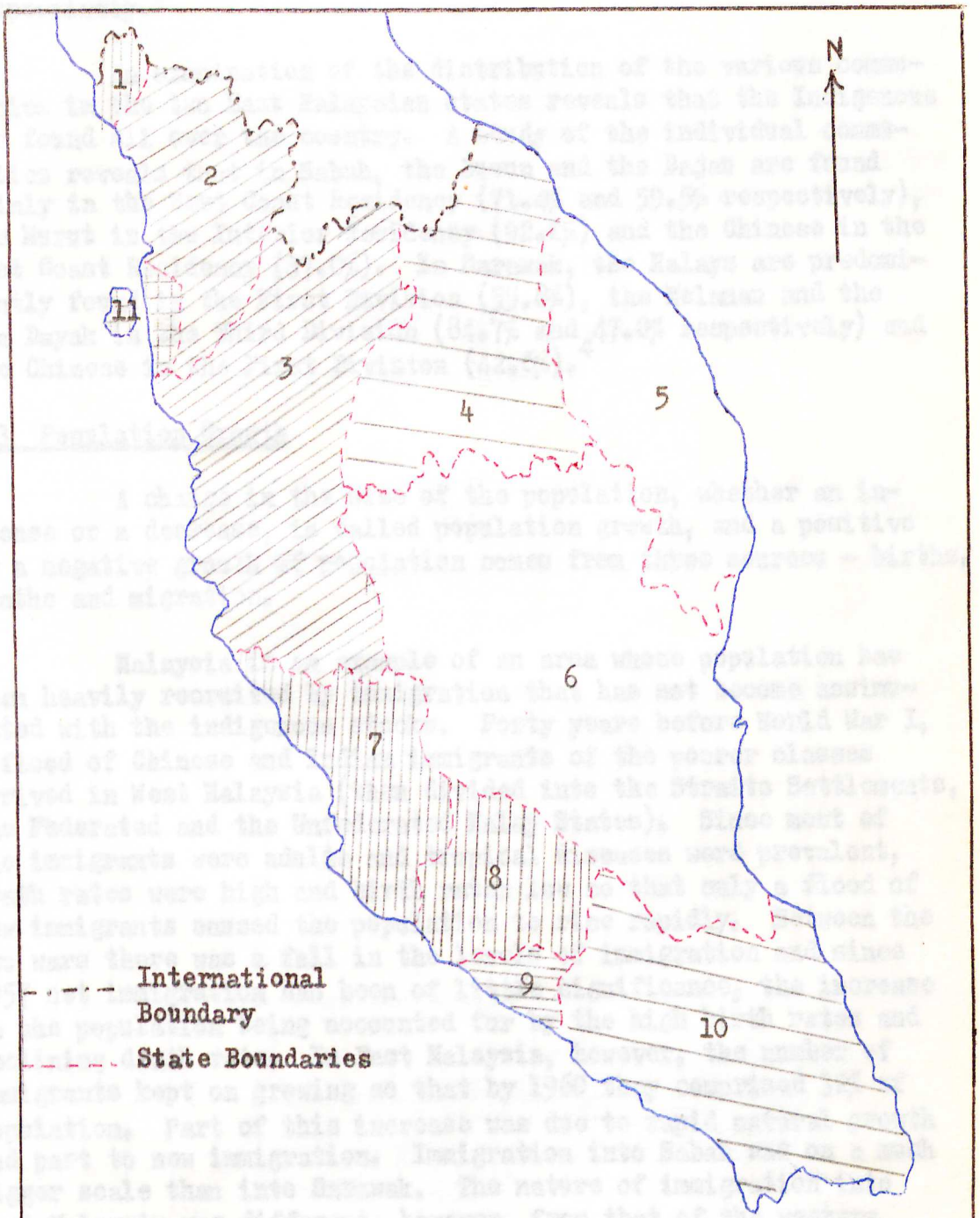
[2] This classification is a modified version of one adopted by T.E. Smith - Population Growth in Malaya - An Analysis of Recent Trends, Oxford University Press, 1952 edition.

MAP 1.1

WEST MALAYSIA POPULATION DISTRIBUTION 1967



1. - Perlis
2. - Kedah
3. Perak
4. Kelantan
5. Trengganu
6. Pahang
7. Selangor
8. Negri Sembilan
9. Malacca
10. Johore
11. Penang

Persons per square mile

: < 100
: 100 - 200
: 200 - 300
: 300 - 500
: 500 - 700
: > 700

Note: This map is derived from data given in Appendix I.

The Indians are found mainly in Selangor, Perak and Johore which account for 29.0%, 25.3% and 10.3% of the Indian population respectively.[3]

An examination of the distribution of the various communities in the two East Malaysian states reveals that the Indigenous are found all over the country. A study of the individual communities reveals that in Sabah, the Dusun and the Bajau are found mainly in the West Coast Residency (71.4% and 59.5% respectively), the Murut in the Interior Residency (92.2%) and the Chinese in the West Coast Residency (37.0%). In Sarawak, the Malays are predominantly found in the First Division (55.8%), the Melanau and the Sea Dayak in the Third Division (84.7% and 47.0% respectively)[4] and the Chinese in the First Division (42.6%).

1.3 Population Growth

A change in the size of the population, whether an increase or a decrease, is called population growth, and a positive or a negative growth of population comes from three sources - births, deaths and migration.

Malaysia is an example of an area whose population has been heavily recruited by immigration that has not become assimulated with the indigenous stocks. Forty years before World War I, a flood of Chinese and Indian immigrants of the poorer classes arrived in West Malaysia (then divided into the Straits Settlements, the Federated and the Unfederated Malay States). Since most of the immigrants were adults and tropical diseases were prevalent, death rates were high and birth rates low so that only a flood of new immigrants caused the population to rise rapidly. Between the two wars there was a fall in the levels of immigration and since 1957 net immigration has been of little significance, the increase in the population being accounted for by the high birth rates and declining death rate. In East Malaysia, however, the number of immigrants kept on growing so that by 1960 they comprised 32% of population. Part of this increase was due to rapid natural growth and part to new immigration. Immigration into Sabah was on a much bigger scale than into Sarawak. The nature of immigration into East Malaysia was different, however, from that of the western portion of the country. Whilst in the latter region the Indians and the Chinese were the main migratory force, in the former the majority of Chinese immigrants in the pre-war periods turned after the war into a majority of Indonesians and Filipinos.

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[3]These percentage figures are calculated from data in Appendix I.

[4]These percentage figures are calculated from data in Appendices II and III.

Growth data for West Malaysia is given in Table 1.2. The population has increased from 2.34 million in 1911 to 8.66 million by 1967 - a period of fifty-six years, with an average annual growth rate of 3.7%. It has been estimated that a population increasing at the rate of 3% will double in about twenty-five years. As such, the phenomenal West Malayan rate of 3.7%, which is high by world standards, will double the Malaysian population in less than twenty-five years. This high rate of growth was characteristic of each of the five inter-censal periods; though the five rates were not uniform, ranging from 1.9% to 3.8%

TABLE 1.2

GROWTH OF THE WEST MALAYSIAN POPULATION
1911 - 1967

Census Year	Population (million)	Inter-Censal ('000)	Annual Increase %
1911	2.34	57	2.4[(a)]
1921	2.91	88	3.0
1931	3.79	70	1.9
1947	4.91	137	2.8
1957	6.28	338	3.8
1967	8.66		

Source: Adapted from H. Fell - Report No. 14. 1957 Population Census of the Federation of Malaya (Department of Statistics, Federation of Malaya, Kuala Lumpur), 1967
Data - From Appendix I.

Note: (a) These rates are simple annual rates and not compound rates of increase. They are calculated by dividing the percentage increase over the inter-censal period by the number of years covered.

With the exception of the Indians, the other two majority groups have shown an important rate of population increase for all the inter-censal periods. The Malaysians[5] have had the most steady annual percentage increase whereas large fluctuations in the growth rates occurred in the case of the Chinese, the highest figure being 5.0% during the inter-censal period 1921-1931. The Indians have been the only group to show a negative growth rate which occurred during the 1931-1947 inter-censal period. This was due to a net emigration of South Indians to India a few years before and a few years after the Second World War; the death of a large number of Indians employed in the construction of the Siam-Burma railway; the breakdown of pre-war high standards of health and sanitary services in the estates where the Indians were mainly employed; and the disruption of the family way of life as a result of the Japanese Occupation.

TABLE 1.3

WEST MALAYSIA - ANNUAL RATES OF POPULATION GROWTH : MAIN ETHNIC GROUPS, 1911-1967

Race	INTER - CENSAL PERIOD				
	1911-1921	1921-1931	1931-1947	1947-1957	1957-1967
Malaysians	1.5	1.9	1.9	2.9	3.9
Chinese	2.4	5.0	2.9	2.4	3.5
Indians	8.4	3.0	-0.04	3.3	3.7
West Malaysia	2.4	3.0	1.9	2.8	3.8

Sources: (1) Lim Chong Yah - Economic Development of Modern Malaya (Oxford University Press, 1967), p. 182.

(2) Appendix I.

[5] "Malaysians" is used to indicate not only the Malays proper, but also the different indigenous communities of Indonesia and North Borneo such as the Achinese, Balinese, Banyanese, Bugis, Menangkabau and the Javanese who are basically persons of the same racial stock and religion as the Malays.

Moreover, the word "Indians and Pakistanis" used hereafter is used to include all the indigenous communities of India and Pakistan such as the Malayalis, Punjabis, Sikhs, Pathans, Gujeratis and others.

Lastly, Eurasians, Ceylonese, Gurkhas, Burmese, Filipinos, Jews, Arabs, Japanese and a host of others are hereafter lumped together as "others".

The fall in the growth rate for both the Chinese and the Indians during 1931-1947 was due to the Great Depression which had the effect of sending thousands of Indians and Chinese back to their native lands. The rise in the post-war growth rates of the total population was due to the partition of India and the impact of the Korean which encouraged inflow of both the Indians and the Chinese.

A combined analysis of population growth for both the East Malaysian states is not possible, for although the first census for Sabah was held as far back as 1891, the first census of Sarawak only took place in 1947. Prior to that, only a head count was organised in 1839. However, information from J.L. Noakes makes it possible to trace the growth in Sarawak from 1841 onwards although the early data must be treated with some caution.[6]

Population growth figures for Sabah tabulated in Table 1.4 show that the population has increased at a tremendous rate since the first recorded figure of 67,062 in 1891. By 1967 the population had reached the 590,000 mark. The data prior to 1911, however, is unreliable as the central authority did not have control over the state and the interior of the country was not penetrated for the census count. The population figures after 1931 have recorded high and increasing growth rates. Between 1931 and 1951 the growth of population was merely 0.7%, 3.0% between 1951 and 1960 and as high as 4.2% between 1960 and 1967.

Population growth of the main communities (the Indigenous and the Chinese) in Sabah is given in Table 1.5. The population consists of a complex mixture of native indigenous and immigrants. The Chinese are the most important of the immigrant groups, and as such only they will be discussed.

The Indigenous population has been gradually increasing since 1911. However, a decline in growth rate occurred in the 1921-1931 inter-censal period. This was mainly due to a decline in population among one of the indigenous groups - the Muruts. The Chinese, too, have registered the same steady increase since 1911. An important point to be noted is that whilst the growth rate of the natives is a natural increase, that of the Chinese is the result of an inflow of fresh immigrants in earlier periods mixed with some natural increase in recent years. However, natural growth is becoming an increasingly important factor among the Chinese of Sabah.

Population growth data for Sarawak is given in Table 1.6. As previously mentioned, data from 1841 to 1909 is very unreliable

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[6] J.L. Noakes - Sarawak and Brunei: A Report on the 1947 Population Census (Kuching, Government Printing Office), 1950.

TABLE 1.4

EAST MALAYSIA (SABAH)
POPULATION GROWTH 1891-1967

Census Year	Population	Per cent Increase	Yearly Growth Rate
1891	67,062	(105.7)[b]	(4.3)
1901	104,157	(53.3)	(7.3)
1911	214,279	22.6	2.1
1921	263,252	5.4	0.5
1931	277,476	20.4	0.7
1951[a]	334,141	36.0	3.0
1960	454,421	29.9	4.2
1967[c]	590,660		

Source: L.W. Jones, North Borneo: Report on the Census of Population taken on 10th August, 1960 (Kuching Government Printing Office), 1962.

Note: [a] Outbreak of Pacific War prevented 1941 Census from being taken.

[b] Figures in parenthesis prior to 1911 are estimates

[c] Appendix II

as it refers to crude estimates of what the population should have been. The 1939 figure should also be treated with caution for it resulted from a head count which was undertaken under difficult circumstances. As such, a comparison between the 1939 figure and that of 1947 does not necessarily establish an increase in population. The increase in population between 1947 and 1960 amounted to 198,144 or 36.3% in 12½ years. Immigration was responsible for only 2.7% of this increase. Since 1960, the effect of immigration has been insignificant.

Table 1.7 shows data regarding the growth of the two important communities in Sarawak - the Indigenous and the Chinese. The most apparent feature is the difference in the growth rate

between the two communities whereas a 2% increase was the lowest recorded by the Chinese (between 1939 and 1947), it was the highest figure attained by the Indigenous (between 1947 and 1960).

TABLE 1.5

EAST MALAYSIA (SABAH)
GROWTH OF THE CHINESE AND THE INDIGENOUS COMMUNITIES
1911 - 1967

Community Census Year	Total Indigenous		Chinese	
	Number	% Increase (b)	Number	% Increase (b)
1911	172,584		27,801	
		+17.9		+41.2
1921	203,041		39,256	
		+10.7		+27.5
1931	205,218		50,056	
		+18.4		+48.6
1951	243,009		74,374	
		+26.1		+40.5
1960	306,498		104,542	
		+22.7		+24.6
1967(a)	376,127		130,268	

Source: L.W. Jones, Report on the 1960 Census of Population of North Borneo.

(a) Refer to Appendix II.

(b) Percentage figures refer to the increase between two tabulated years.

Note:

TABLE 1.6

EAST MALAYSIA (SARAWAK)
POPULATION GROWTH - 1841-1967

Year	Population	Increase		Annual % Increase
		No.	%	
1841	10,500			
1871	141,546	131,046	(1,248.1)[a]	41.6
1909	416,000	274,454	(193.9)	5.1
1939	490,587	74,587	(17.9)	0.9
1947	546,385	55,798	(11.4)	1.4
1960	744,529	198,144	36.3	2.5
1967	902,841	158,312	21.3	3.0

Source: Reports on the 1947 and 1960 Censuses of Sarawak and Brunei, 1967 Data from Appendix III.

Note: [a] Figures in parenthesis are unreliable.

TABLE 1.7

EAST MALAYSIA (SARAWAK) GROWTH OF THE CHINESE AND THE INDIGENOUS COMMUNITIES - 1939 - 1967

Communities	Indigenous		Chinese	
Year	Number	% Increase	Number	% Increase
1939	361,676		123,626	
		1.1		2.0
1947	395,417		145,158	
		2.0		3.7
1960	507,252		209,154	
				4.3
1967[a]	-	-	296,977	

Source: Reports on the 1947 and 1960 Census of Sarawak and Brunei.

[a] Refer to Appendix III.

1.4 Population Projections

Calculations of future population trends are called by various names such as forecasts, extra polations, estimates or projections. These merely consist of extending some plausible pattern of growth from the past into the future. They outline the course of vital events by means of assumptions which are exceedingly simple and arbitrary. As such there are several reasons why population projections for Malaysia should be treated with some reserve.

Firstly, especially in the case of the Borneo states of Malaysia, past trends of growth cannot be determined accurately for lack of good records of birth and deaths. Secondly, population expansion is influenced by social and economic conditions and further changes in these cannot be forecast with accuracy in any country, and in the case of East Malaysia, especially, it is likely that because great changes have occurred in recent decades, conditions are unlikely to remain stable for the period covered by the projections. Fertility, moreover, is assumed to remain constant. However, not only current levels of fertility but also future social and economic changes must have their effect on fertility in the future. So doubt over this assumption cannot be avoided. Whether fertility will grow further, or whether, after reaching a peak it will decline and subsequently remain constant, or will even continue to decline, as family limitation gains ground for instance, can only be guessed at. Lastly, the increase in the expectation of life in East and West Malaysia cannot be ruled out.

Certain percentage projected increases of the population of Malaysia tabulated in Table 1.8 below are given in the First Malaysia Plan. Assuming that these are compound rates of increase, computations by the use of the compound rate of increase equation (see note to Table 1.8) give the projected population as 15,650 thousands by 1985. This is on the assumption that the present 3% rate of increase is brought down to 2.2% between 1980 and 1985.

The data above, however, conflicts with the projected percentage increases given by the National Family Planning Board shown in Table 1.9. The outstanding difference in table 1.9 is that after 1970, all the rates of increase are 0.2% below the projected figures given in the First Malaysia Plan. As such, the population is expected to be 15,170 thousand by 1985. This is 3.1% smaller than the figure of 15,650 thousand in Table 1.8.

However, assuming that the data given in both tables 1.8 and 1.9 is over-optimistic, and that the population will continue to grow at the 3% rate throughout till 1985, then the population growth data will appear as in Table 1.10. In this case, the population figure of 17,020 thousands or 17.02 million will be nearly twice the 1965 figure of 9.41 million inhabitants. This means that the population will double in about twenty years. These projections

TABLE 1.8

MALAYSIA - POPULATION PROJECTIONS (1965-1985)
FIRST MALAYSIA PLAN ESTIMATES

Year	Population Increase	
	No. ('000)[a]	%
1965	9,411	
		3.0
1970	10,910	
		2.7
1975	12,460	
		2.4
1980	14,030	
		2.2
1985	15,650	

Source: First Malaysia Plan (1965-1970) p. 61.

Note: [a] The compound rate of increase is computed by means of the formula $\bar{P} = P_1(1+r)^n$ where $\bar{P}$ - absolute population after n years; P_1 - absolute population at initial year; r - rate of increase; and n - number of years between present year and year for which projections are being computed.

TABLE 1.9

MALAYSIA - POPULATION PROJECTIONS (1965-1985)
NATIONAL FAMILY PLANNING BOARD ESTIMATES

Year	Population Increase	
	No. ('000)	%
1965	9,411[a]	
		3.0
1970	10,910	
		2.5
1975	12,320	
		2.2
1980	13,730	
		2.0
1985	15,170	

Source: National Family Planning Board, Malaysia. Annual Report, 1967; p. 6

Note: [a] Computed by compound rate formula.

TABLE 1.10

POPULATION PROJECTIONS 1965-1985
AT 3% COMPOUND INCREASE

Year	Population	Increase
	No. ('000)	%
1965	9,411	
		3.0
1970	10,910	
		3.0
1975	12,680	
		3.0
1980	14,690	
		3.0
1985	17,020	

are all illustrated in diagram 1.1 which provides a clearer picture of the situation. There is some justification for assuming a 3% rate of growth, for Jones[7] has given the following rates of increase for the East Malaysian States. As such,

	1960-70	1970-80	1980-85
Sarawak	3.0	3.5	3.9
Sabah	2.9	3.3	3.8

the estimates made in the First Malaysia Plan and by the National Family Planning Board seem highly over-optimistic. The figures above show that the rate is not expected to fall but to become even greater after 1985.

Projected data for the main communities in West Malaysia is given in Table 1.11 on assumption that the growth rates of the National Family Planning Board which have been applied to the whole of the Malaysian population will also apply to each of the communities. By 1985, the Malaysians would have increased from 4.352 million to 6.572 million, a percentage increase of 51.01. The Chinese would have increased by 49.28% to 4.723 million by the same year, starting from an initial size of 3.157 million in 1967; and the Indians would amount to 1.432 million - an increase of 5%.

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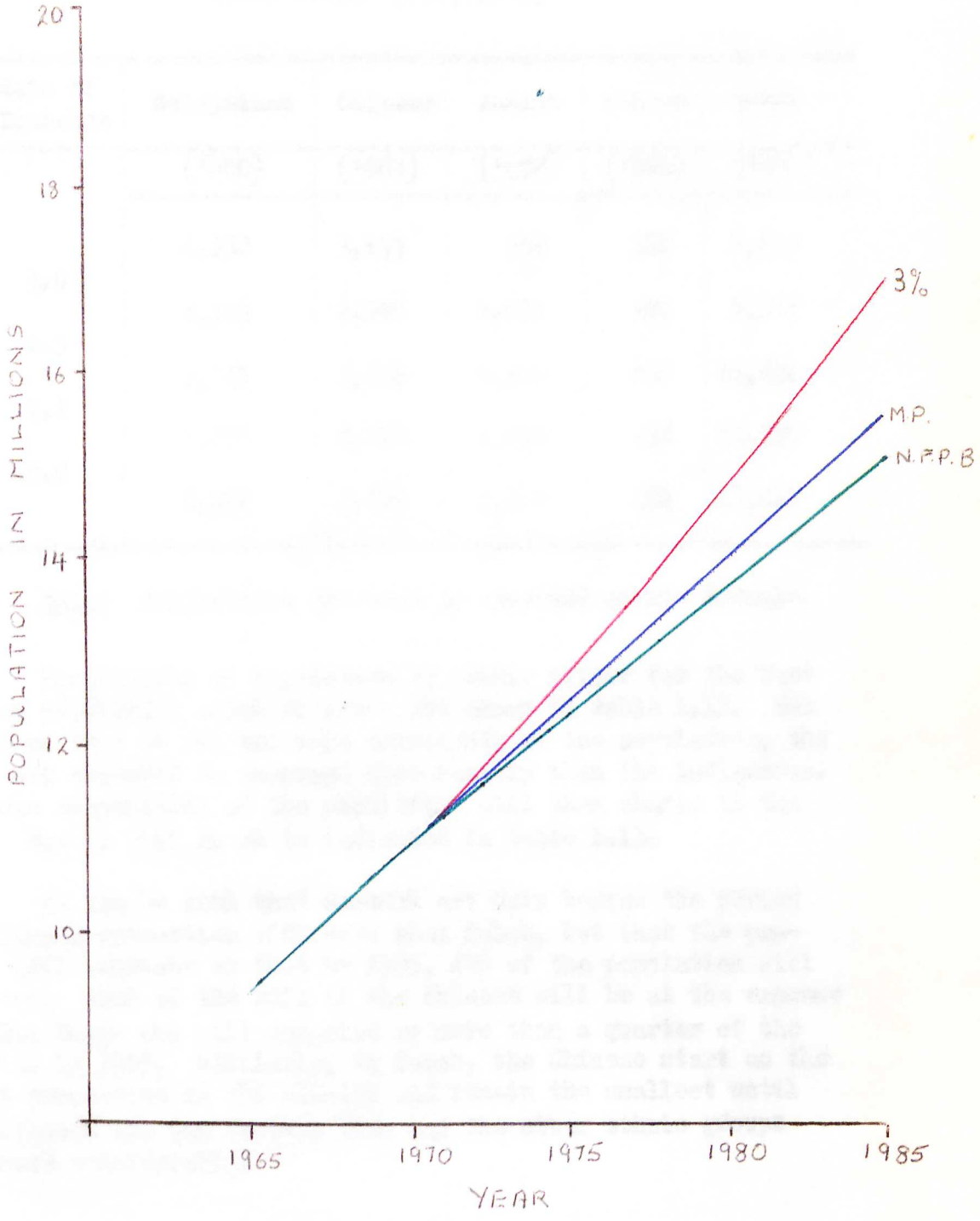
[7] L.W. Jones, The Population of Borneo - A Study of the Peoples of Sarawak, Sabah and Brunei (Athlone Press), 1966.

DIAGRAM 1.1

MALAYSIA - POPULATION PROJECTIONS
1965 - 1985



N.F.P.B. - National Family Planning Board.

M.P. - First Malaysia Plan.

TABLE 1.11

WEST MALAYSIA - POPULATION PROJECTIONS BY COMMUNITIES (1967-1985)

Year	Rate of Increase	Malaysians ('000)	Chinese ('000)	Indian ('000)	Others ('000)	Total ('000)
1967		4,352	3,157	958	189	8,655
	3.0					
1970		4,729	3,398	1,031	204	9,362
	2.5					
1975		5,341	3,839	1,165	230	10,650
	2.2					
1980		5,953	4,278	1,298	256	11,790
	2.0					
1985		6,572	4,723	1,432	283	13,010

Note: Projections are made by compound growth formula.

Projections of population by ethnic origin for the East Malaysian population given by Jones are shown in Table 1.12. The table shows that of the two main components of the population, the Chinese are expected to increase more rapidly than the Indigenous. The ethnic composition of the population will then change in the future. How it will do so is indicated in Table 1.13.

It can be seen that Sarawak not only begins the period with a larger proportion of Chinese than Sabah, but that the proportion will increase so that by 1985, 40% of the population will be Chinese. Much of the gain of the Chinese will be at the expense of the Sea Dayak who will comprise no more than a quarter of the population in 1985. Similarly, in Sabah, the Chinese start as the smallest proportion in the country and remain the smallest until 1985, although the gap between them and the other ethnic groups is narrowed considerably.

TABLE 1.12

EAST MALAYSIA - ANNUAL RATES OF GROWTH OF PROJECTED POPULATION (1960-1985)

Period	1960-70	1970-80	1980-85
Sarawak			
Total Population	3.0	3.5	3.9
Indigenous	2.5	2.8	3.3
Chinese	4.0	4.7	5.0
Sabah			
Total Population	2.9	3.3	3.8
Indigenous	2.7	2.9	3.4
Chinese	3.6	4.4	4.6

Source: Jones, The Population of Borneo, p. 168

TABLE 1.13

EAST MALAYSIA THE ETHNIC COMPOSITION OF THE PROJECTED POPULATION (1960-1985) - PERCENTAGES

	1960	1970	1980	1985
Sarawak				
Malay, Melanau	23	23	22	21
Sea Dayak	32	29	26	25
Other Indigenous	13	13	12	12
Chinese	31	34	38	40
Sabah				
Dusun, Murut	37	35	32	31
Other Indigenous	31	31	31	31
Chinese	23	25	28	29

Source: Jones, The Population of Borneo, p. 203

1.5 Sex Ratio

The sex-ratio, referring usually to the number of males per thousand females or females per thousand males, is of immense help in population analysis. For example, it is an important measure of the degree of permanent settlement of an immigrant community. Due to influence of immigration, one must expect marked differences in the sex ratios both of the various races and of the same race at successive censuses.

The sex ratios of West Malaysia for 1911-1967 are shown in Table 1.14. The number of males per thousand females calculation has always resulted in a majority for the former sex since 1911. In that year, a figure of 1,697 males per thousand females was recorded for all communities - which fell to 1,129 in 1947 but rose to 1,045 in 1967. The excess of males has been due mainly to a majority of males in the immigrant races, namely the Indians and the Chinese, both recording figures in excess of 2,000 before 1931.

TABLE 1.14

WEST MALAYSIA - SEX RATIOS[a] OF MAIN COMMUNITIES 1911-1967

Year	All Communities	Malaysians	Chinese	Indians	Others
[b] 1911	1,697				
1921	1,543	1,042	2,819	2,366	1,047
1947	1,129	990	1,228	1,477	1,243
1957	1,065	987	1,080	1,340	1,537
1967	1,045	993	1,040	1,098	1,731

Source: Calculated from Data in the Reports on the Censuses of population 1921, 1947, 1957; and Appendix I.

Note: (a) Sex ratio is calculated by the Formula - $\frac{\text{Male}}{\text{Female}} \times 1000$ - that is, males per thousand females.

(b) Data for the various communities is not available for 1911.

The distribution of the population of various communities and sex brings to light more interesting developments. Table 1.14 indicates that the number of females for the Malaysians has always exceeded the number of males. It is possible that more women tend to avoid the enumerator, but a 50:50 sex ratio is a normal thing to be expected in a community which is not so vastly influenced by

immigration as the Indian and Chinese communities are. For example, the sex ratio for the Malaysians has varied from 990 in 1947 to only 993 in 1967. This means that throughout the several decades the proportion of native males and females has not fluctuated much.

The Chinese, the main immigrant community, have shown a characteristic pattern towards becoming a more and more permanently settled community. This trend is inherent in the fact that the number in each of the two sexes has moved towards greater parity leading to a more normal sex ratio. In 1921, out of about 845,000 Chinese in the country, about three quarter were of the male sex, the sex ratio being 2,819. The small number of females meant that among the early Chinese immigrants, there were many who came to earn some money and return home. Restriction on immigration during the early 1930's reduced the number of men - having an equalising effect on the sex ratio. The influx of Chinese women from the mid-1930's further helped to equalize the sex ratio. One explanation for the sudden influx of Chinese females is that with the restriction on male immigration, women were sent out from China as breadwinners instead of the men.[8] Another explanation is that the depression caused in the Chinese silk industry because of the competition from rayon caused many women to search for work in Malaya.[9] The main reason, however, was that large numbers of wives, children and unmarried women were sent to join relations in Malaya as war with Japan threatened and finally broke out in July, 1937.[10] Hence a more balanced distribution of the sexes has resulted. In 1967 there were 1,613,881 males to 1,543,542 females, or 51% to 49% respectively.

The Indians have remained immigrant in nature until very recently. They were, like the Chinese, concerned with earning a living and returning home. However, their desire towards making Malaysia their permanent home emerged very much later than the Chinese as reflected by the abnormality of the sex ratio. The earlier high ratios for the males were due to the fact that it was the male sex which immigrated to Malaysia, looking for work and leaving their wives and children at home. Gradually, more and more of them began bringing their spouses leading to a smaller difference between the two sexes.

In the case of the East Malaysian state of Sabah, the sex ratio reveals a majority of males since 1911. The sex-ratio (the number of females per thousand females in this case) increased from 881 in 1911 to 920 in 1960 and declined again in 1967 (see Table 1.15).

In terms of communities, the immigrant races (mainly the Chinese) had a majority of males which varied with the stage of

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[8] Norton Ginsburg and Chester F. Roberts - Malaya, Seattle, 1958, p. 251.

[9] Victor Purcell - The Chinese in Malaya, Oxford, 1958, p. 200.

[10] Singapore Annual Report, 1958, p. 33.

immigration and settlement reached. The early immigrants were mainly men, the women arriving only after a fairly long interval once the men had established themselves. By 1967, the Chinese had twenty-five years to establish themselves without the influence of further immigration. As such, a permanency of settlement is indicated by the sex ratio which had increased from a low figure of 221 in 1911 to 908 by 1967.

TABLE 1.15

EAST MALAYSIA (SABAH), NUMBER OF FEMALES PER THOUSAND MALES[a] 1911-1967

Race	1911	1921	1931	1951	1060	1967
All Indigenous	998	1,010	1,014	1,013	1,005	-[b]
Chinese	221	367	565	795	881	908
All Communities	881	835	886	938	920	892

Source: Jones - Report on the Census of Population of North Borneo, 1960; Appendix II.

Note: [a] Formula - $\frac{\text{female}}{\text{male}}$ X 1000.

[b] Not available.

The Indigenous population had a small majority of males in 1911, but thereafter, there has always been a small majority of females.

In Sarawak, an improving sex ratio among the immigrants and a small majority of females among the native races are found (see Table 1.16). Just as in Sabah, variation in the sex ratio from one date to another was probably due to migration. The Chinese sex ratio becomes more normal as the days of large scale immigration recede.

TABLE 1.16

EAST MALAYSIA - (SARAWAK) NUMBER OF FEMALES PER THOUSAND MALES IN SELECTED ETHNIC GROUPS 1947, 1960, 1967

Race	1947	1960	1967
All Indigenous	1,015	1,021	1,007
Chinese	783	904	914
Total Population	943	981	970

Source: Noakes, Op.cit. Appendix II.

1.6 Marital Status

The subject of marital status may be classified into four categories, namely single, married, widowed or divorced. A single person is one who has never married. A widowed - one whose wife or husband is dead and who has not remarried; a married person is one who is married and whose spouse is alive, and a divorced individual is one who has his or her marriage legally terminated and who has not remarried.

Table 1.17 shows the percentage of persons in the four categories of marital status in 1947 and 1957. The figures for "single" were smaller in 1947 than in 1957 due to the custom of early marriage during the early 1900's. This fact is reinforced by the data for "married" which shows a higher percentage of married in 1947 than in 1957. The data on "widowed" also gives useful information. A bigger number of people were found in this category in 1947 than ten years later. This was mainly due to the Japanese Occupation during which large numbers of males, especially the Chinese, were killed.

In terms of the sexes, there was a larger number of "single" for the males in both periods. One reason was the larger number of males in the population. The difference between the married males and females was greater in 1947 than in 1957 because immigration was an important force right up to 1947, and since many of the immigrants were males, there was therefore a greater proportion among the males who were not married. In both periods, the number of "widowed" among the females outnumbered by far those in the opposite sex. This is due to the shorter life span among males. The larger number of "divorced" among the females was partly due to the Muslim custom of polyamous marriage which allows four wives to one man.

TABLE 1.17

WEST MALAYSIA PERCENTAGE DISTRIBUTION OF TOTAL POPULATION BY MARITAL STATUS 1947, 1957[a]

Marital Status	1947			1957		
	Persons	Male	Female	Persons	Male	Female
Single	54.3	59.3	49.0	57.5	61.6	53.1
Married	38.1	36.7	39.6	36.6	35.7	37.5
Widowed	5.5	2.5	8.7	4.5	1.8	7.4
Divorced	2.1	1.5	2.7	1.4	0.9	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: [a] Reports on the 1947 and the 1957 Censuses of the Federation of Malaya.

Note : [b] Each column is a percentage of the total number of males or females in the country at that particular year.

The data on marital status for Sabah is given in Table 1.18. In examining the figures, one must note that there has been a considerable lack of precision in the use of terms such as "married" and "single". Christian and Muslim marriages had by law to be registered, but there was no registration of pagan marriages. The data reveals that the percentage of "single" among the males had dropped from 62.0% in 1921 to 60.0% in 1960. In 1921, about 60% of the population was single and the figure dropped to 55% ten years later. In 1921 and 1931, the figures for "single" and "married" for both the sexes were same, except that the number of single women fell from 58% to 49%, probably due to inaccuracy in reporting. This pattern has not changed much since then. There was an increase in the proportion of singles in 1960 over 1951 due to an increase in the number of children in the inter-censal period.

The data for Sarawak, given in Table 1.19, reveals that more people were married in 1960 than in 1947. The percentage of single persons remained the same. Between the males and the females fewer women than men were single. These trends are not unique as they are found both in Sabah and in West Malaysia.

TABLE 1.18

EAST MALAYSIA (SABAH) - PERCENTAGE DISTRIBUTION OF TOTAL POPULATION BY SEX AND MARITAL STATUS 1921-1960

Marital Status	1921		1931		1951		1960	
	M	F	M	F	M	F	M	F
Single	62.0	58.0	59.0	49.0	57.0	49.0	60.0	62.6
Married	38.0	42.0	38.0	43.0	38.5	40.9	37.0	39.5
Widowed	-	-	2.5	7.0	3.0	8.5	2.0	6.7
Divorced	-	-	0.5	1.0	1.5	1.6	1.0	1.2
Total	100	100	100	100	100	100	100	100

Source: Jones - Population of Borneo.

Note : M - Males; F - Females.

TABLE 1.19

EAST MALAYSIA (SARAWAK) - MARITAL STATUS OF PERSONS AGED TEN AND ABOVE 1947/51 AND 1960 - PERCENTAGES

Year	Single		Married		Widowed		Divorced	
	Male	Female	Male	Female	Male	Female	Male	Female
1947	40	29	53	55	5	12	2	4
1960	40	30	55	57	3	10	2	3

Source: Adapted from L.W. Jones - Sarawak: Report on the Census of Population taken on 15th August, 1960 (Kuching Government Printing Office), 1962.

1.7 Age Distribution

A study of the population by age groups is an important item of population analysis, for many activities are unevenly distributed by age. Age, therefore, is an important means of separating the groups of people to be studied.

West Malaysia has a very young population as shown in Table 1.20 and as described by the population pyramid in diagram 1.2. The diagram shows a population pyramid - broad at the base and tapering towards the top. This is typical of a young population where a larger number of people are being added to the younger age groups - especially in a closed population (that is, one unaffected

by immigration and emigration). West Malaysia, especially, has been little affected by these forces since 1957. Had there been recent gains or losses of immigrants, this would have visible in the age pyramid as an excess or shortage of young adults, inconsistent with the population in other ages. It would also have shown any gross irregularities due to epidemic or war. Table 1.20 shows 1.599 million people in the age group 0-4, 1.371 million in the group 5-9 and so on, the figure declining with increase in age.

The total population distributed by broad age groups for 1957, and 1967 is given in Table 1.21. The data from this table, too, supports the fact that Malaysia has a young population. That the population is young and growing is more evident in the case of figures for 1967. In 1957, for example, of the total, 43.9% of the population were below fifteen years of age and in 1967, the corresponding figure was 46.7%. In a period of ten years, the number of people below 15 had increased by 1.9%. The 15-44 age group, that is, the working population, registered a decrease from 41.4% to 39%. The point of significance here is that the younger group covers a range of 15 years whilst the older group - a range of twenty-nine years. The figures for the older age groups, that is those sixty and above, have not changed much. Moreover, these from fifteen to fifty-nine have decreased by as much as 3.5%

TABLE 1.20

WEST MALAYSIA - AGE DISTRIBUTION 1967

Age Group	Males	Females	Total	Age Group	Males	Females	Total
0-4	815.4	784.3	1,599.7	40-44	177.0	172.4	349.4
5-9	698.2	673.2	1,371.4	45-49	160.5	153.8	314.3
10-14	587.7	570.8	1,158.5	50-54	140.2	124.2	264.4
15-19	473.4	457.4	930.8	55.59	130.1	106.5	236.6
20-24	341.6	316.3	657.9	60-64	103.1	79.7	182.8
25-29	295.9	293.1	589.0	65.69	70.2	51.3	121.5
30-34	247.3	251.9	499.2	70-74	39.3	34.4	73.7
35-39	206.2	213.3	419.5	75-79	19.8	18.4	38.2
				80 and above	11.0	13.5	24.5

Source: Fell, Op.cit

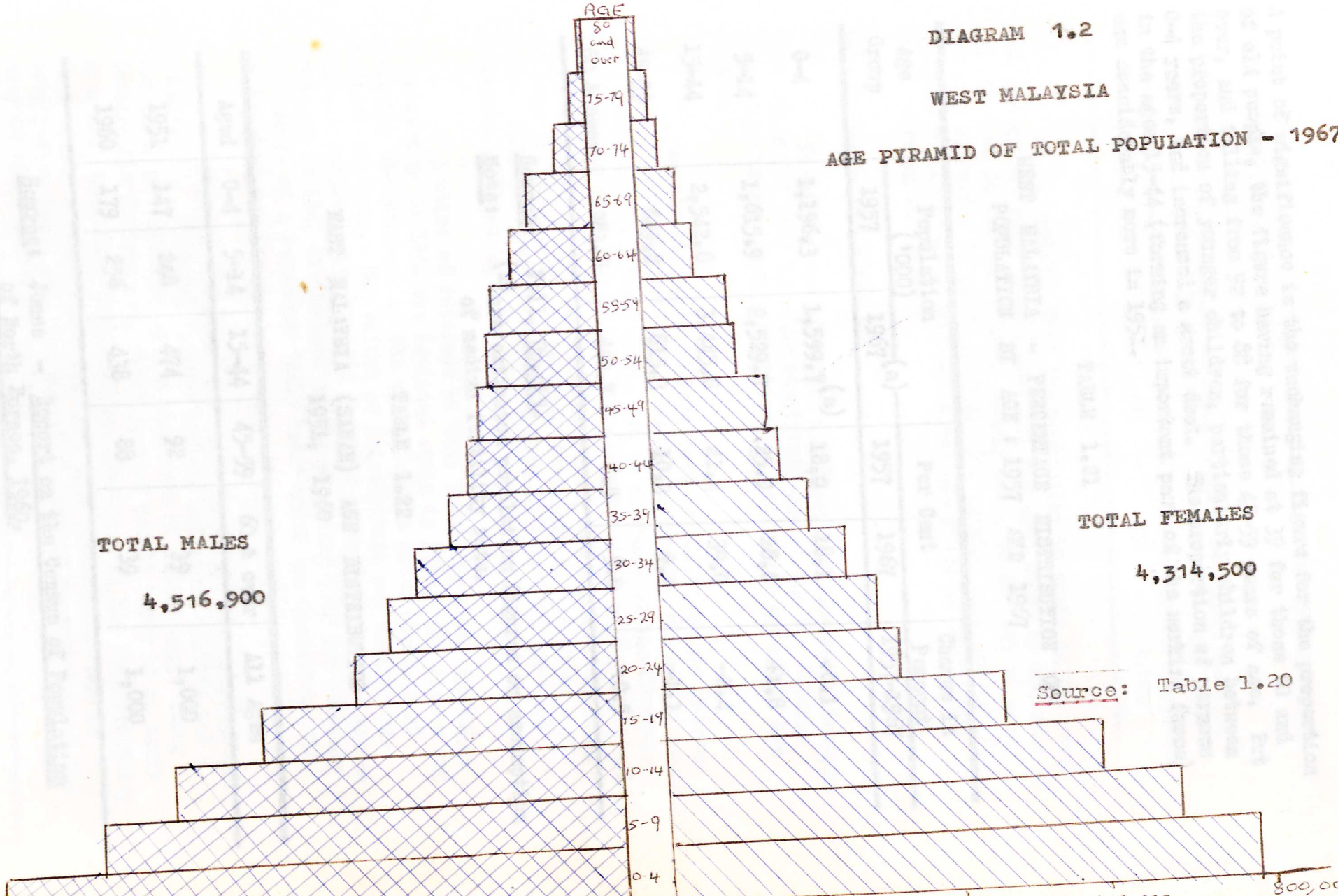
Note : The above figures are of estimated population based on "medium" fertility rates and are given in thousands.

The age distribution data for Sabah is given in Table 1.22

DIAGRAM 1.2

WEST MALAYSIA

AGE PYRAMID OF TOTAL POPULATION - 1967



A point of significance is the unchanging figure for the proportion of old people, the figure having remained at 39 for those 60 and over, and falling from 92 to 88 for those 45-59 years of age. But the proportion of younger children, particularly children between 0-4 years, had increased a great deal. The proportion of persons in the ages 15-44 (forming an important part of the working force) was considerably more in 1951.

TABLE 1.21

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF POPULATION BY AGE : 1957 AND 1967

Age Group	Population ('000)		Per Cent		Change in Percent
	1957	1967(a)	1957	1967	1957-1967
0-4	1,196.3	1,599.7(a)	18.0	18.1	+0.1
5-14	1,615.9	2,529.9	25.9	28.6	+1.8
15-44	2,542.8	3,445.8	41.4	39.0	-2.4
45-59	649.8	815.3	10.3	9.2	-1.1
60 & over	283.8	440.7	4.5	5.0	+0.5

Source: Fell, Op.cit.

Note: (a) are estimated population figures on assumption of medium fertility rate.

TABLE 1.22

EAST MALAYSIA (SABAH) AGE DISTRIBUTION 1951, 1960

Aged	0-4	5-14	15-44	45-59	60 & over	All Ages
1951	147	248	474	92	39	1,000
1960	179	256	438	88	39	1,000

Source: Jones - Report on the Census of Population of North Borneo, 1960.

A summary of distribution in Sarawak for 1960 is given in the table below.

Age	0-4	5-14	15-44	45-59	60 and over	All Ages
	172	273	405	98	52	1,000

It is noteable that the population is again on the young side for out of every 1,000, only 150 are aged above 45 and only 52 are above 60. On the other hand, nearly half, or 445 out of every thousand are under 15 years of age. The working ages account for a figure of 405 (that is, if the 15-44 age group is considered as the working age group).

1.8 Fertility and Mortality

Fertility and mortality are important factors in demographic study for they together constitute one of the two factors (the other is immigration) influencing population structure and growth.

In our study, it is important to differentiate between "fertility" and "fecundity". The former denotes the actual level of performance in a population, and is measured as the frequency of births in that population. The latter refers to the potential level of performance, or, in other words, the physical capacity to bear children. A common index of fertility is the crude birth rate. Data for crude birth rates from 1932 to 1958 for West Malaysia is given in Table 1.23.

A point of interest is that fertility rates gradually increased up to 1940 but declined again in 1941. One reason was probably the outbreak of the war causing a great shortage of medical services. The effect of malnutrition was another important factor in the lowered vitality of the women. The sudden increase in 1947 as compared to the preceding year was possibly the result of a temporary "baby boom" which was characteristic of the post war years.

Factors affecting fertility in Malaya are cultural and demographic. Cultural factors include religious beliefs and a low level of education with a high rate of illiteracy. Among demographic factors are, firstly, that people marry at an early age, and, secondly, that everyone marries. It has been estimated that if the average woman does not give birth before she is twenty-five years old, the potential rate of reproduction of the average woman decreases as much as 25%.[11]

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[11] Frederick Asborne - Population, An International Dilemma. A summary of Proceedings of the Conference Committee on Population Problems, 1956-1957 (New York, 1958, p. 25).

TABLE 1.23

WEST MALAYSIA LEVELS AND TRENDS OF CRUDE BIRTH RATES (PER 1,000 POPULATION)

Year	Crude Birth Rate[a]	Year	Crude Birth Rate[a]	Year	Crude Birth Rate[a]
1932	37.0	1941	38.0	1950	42.0
1933		1942	-	1951	43.6
1934		1943	-	1952	44.4
1935	37.8	1944	-	1953	43.7
1936	40.4	1945	-	1954	43.8
1937	39.0	1946	35.0	1955	44.3
1938	41.2	1947	43.0	1956	46.9
1939	42.0	1948	40.4	1957	46.2
1940	40.7	1949	43.8	1958	43.2

Source: Population increase and economic development in Asia (The Institute of Asian Economic Affairs, Institute of Advanced Projects, East-West Center, p. 63).

Note: The estimate is based on the population exclusive of maritime travellers, war prisoners, before 1954, and service personnel working at various establishments for service.

(a) The crude birth rate is calculated by means of the equation $\frac{B}{P}k$, where B = total number of births registered during the calender year, P = total population at the middle of the year, k = 1,000.

Fertility rates in terms of ethnic groups show that the Indians had the highest rates (between 1956 and 1958) followed by the Chinese and then the Malays in that order. This is shown in Table 1.24.

In the case of East Malaysia, indicators of fertility found in the census reports include ratios of children to women.

These child/woman ratios given in Table 1.25 show that there has been a consistent increase in the ratio between 1947/1951 and 1960. It is greater in North Borneo than in Sarawak, and markedly greater among the Chinese than the Indigenous.

TABLE 1.24

WEST MALAYSIA - TOTAL FERTILITY RATES BY ETHNIC GROUPS (1956-1958)

Malays	Chinese	Indians
6.4	6.5	7.3

Source: J.C. Caldwell - "Malaysia's Population Problem" - in Asia's Population Pattern Edited by S. Chandrasekar (George Allen and Unwin, Ltd., London).

TABLE 1.25

EAST MALAYSIA - RATIO OF CHILDREN 0-4 TO WOMEN AGED 15-45 IN SELECTED ETHNIC GROUPS, 1947/51, 1960

State	1947/1951 Census	1960 Census	
			(a)
Sarawak			
All Races	0.62	0.82	0.98
Sea Dayak	0.55	0.72	0.85
Chinese	0.81	0.99	1.19
Sabah			
All Races	0.62	0.86	0.78
Murut	0.28	0.62	0.64
Chinese	0.81	0.94	1.12

Source: Jones - Population of Borneo.

(a) - adjusted ages.

Data on mortality is given in Table 1.26. The crude mortality rates declined gradually in the post-war period and dramatically in the last generation due to new medical discoveries such as antibiatics, insecticides, and vaccines.

TABLE 1.26

WEST MALAYSIA TRENDS OF CRUDE MORTALITY
(PER 1,000) (1930-1959)

Year	Mortality Rate	Year	Mortality Rate	Year	Mortality Rate
1930-1934	21.5	1948	16.3	1954	12.2
1935-1939	20.8	1949	14.2	1955	11.8
1940-1944	21.1	1950	15.8	1956	11.6
1945	-	1951	15.3	1957	12.4
1946	20.0	1952	13.6	1958	11.0
1947	19.4	1953	12.4	1959	9.7

Source: United Nations Demographic Yearbook (Editions 1948, 1954, 1958, 1959 and 1960).

Note : Data includes Singapore until 1941. Crude mortality rates are usually circulated by means of the formula D/P k, where D - total number of deaths during the calender year (January 1 to December 31); P - total population at the middle of the year (July 1); k - 1,000.

Crude death rates in Malaysia were above 20 per 1,000 prior to World War I. Figures for the period since War II, in table, however, show a decline from 19.4 in 1947 to 9.7 in 1959. The application of the 1947 age specific death rates to the 1957 population of Malays by J.C. Caldwell[12] show that the number of deaths occurring in 1955 would have been 55,000 greater than the 89,000 actually recorded. Thus a substantial improvement in the

[12] J.C. Caldwell - "Malaysia's Population Problem".

populace's welfare had taken place between the two years.

A reference to both the birth and the death rates together shows that the gap between the two rates is greater than ever before. These two factors are, therefore, having a great influence on the rate of population increase since immigration is now negligible.

1.9 Urbanisation

The term "urbanisation" refers to the process whereby an increasing proportion of a country's population come to live in cities. It must be differentiated from "urbanism" which refers to the way of life usually found in large urban centres. Urbanisation is in fact the movement of people from communities concerned chiefly with agriculture, to other communities, generally larger, whose activities are primarily centred in government trade, manufacture, or allied interests. The speed of the process of urbanisation has varied from time to time in Malaysia. For example, it increased tremendously during the emergency when large numbers of people were resettled in new settlements called 'new villages'.

In all Malayan censuses, the term "urban" has been restricted to gazetted administrative areas with a population of 1,000 or over. As this is a rather low figure, tables for administrative areas of 10,000 persons and over are also included.

Table 1.27 shows that more than 42% of the West Malaysian people were found in urban areas in 1957. This is a considerably large figure for an under-developed country. Even if we use the 10,000 and above criterion, the percentage figure of 26.5 is still high (see Table 1.28).

TABLE 1.27

WEST MALAYSIA[(a)] - GROWTH OF URBAN POPULATION 1911-1957 (GAZETTED AREAS 1,000 POPULATION AND OVER) 1957

	Percentage of Urban to Rural				
Year	1911	1921	1931	1947	1957
Malaya[(a)]	17.2	19.1	22.1	26.5	42.5

Source: Fell, Op.cit.

Note: [(a)] Malaya Excludes Singapore.

TABLE 1.28

WEST MALAYSIA - GROWTH OF URBAN POPULATION
1911-1957 (GAZETTED AREAS 10,000 AND OVER)

Year	Percentage of Urban to Total				
	1911	1921	1931	1947	1957
Malaya	10.7	14.0	15.1	15.9	26.5

Source: Fell - Op.cit.

Note: Malaya Excludes Singapore.

The smallest increase in the process of urbanization was recorded in the inter-censal period 1911-1921 when it amounted to only 1.9% according to the "1,000 and above" criterion . The greatest increase was recorded between 1947 and 1957 when the figure increased tremendously from 26.5% to 42.5%.

The Emergency played an important part in the process of urbanization for the urban areas mushroomed during its height. Recently, other factors such as the normal perennial attractions of towns and the economies of concentration, increase in government activity and progress in industrialization have all generated their own multiplier effects providing more employment opportunities which have in turn encouraged the urban expansionary process.

In the case of East Malaysia, it should be noted that the term "urban" was used in 1960 to designate agglomerations of 3,000 or more people, and that although the term was not used in earlier censuses, it is possible to extract appropriate figures from the 1947/51 reports.

Table 1.29 shows that the urban population in Sabah which amounted to slightly more than 34,000 in 1951 had increased to more than 67,000 in 1960 - an increase of slightly less than 50%. The same trend was apparent in Sarawak. The percentage of urban to total population, too, has increased in the two states. In Sabah, this proportion increased from 10% to 15% whilst in Sarawak it increased from 12% to 15%.

Table 1.30 shows that the majority of the urban dwellers are Chinese who accounted for 70% of the urban population in Sabah and 67% in Sarawak in 1960. A greater proportion of the remainder was made up of Indigenous. The others formed a greater proportion in Sabah than in Sarawak.

TABLE 1.29

EAST MALAYSIA - URBAN POPULATION
1947/51 AND 1960

	SABAH		SARAWAK	
	1951	1960	1947	1960
Total Population	334,141	454,421	546,385	744,529
Urban Population	34,009	67,674	67,544	111,757
Percentage of Urban Population	10	15	12	15

Source: Jones - The Population of Borneo.

TABLE 1.30

EAST MALAYSIA - ETHNIC COMPOSITION OR
URBAN POPULATION, 1960

State	Urban Population		Indigenous		Chinese		Others	
	Number	%	Number	%	Number	%	Number	%
Sabah	67,674	100	11,715	17	47,682	70	8,277	13
Sarawak	111,757	100	33,740	30	74,915	67	3,102	3

Source: Adapted from Jones - The Population of Borneo.

1.10 Conclusion

The foregoing sections have not all been equally comprehensive. More emphasis has been laid on sections which have a greater bearing on discussion in subsequent chapters.

CHAPTER II

ECONOMIC CHARACTERISTICS OF THE WORKING POPULATION

2.1 Introduction

The population of a country may be divided into two parts: the economically active, which may be sub-divided into the working and non-working classes, and the non-economically active.

The size of the labour force is influenced by several factors. The demographic structure such as age distribution, sex composition, etcetera is one of these. For example, the greater the population between ages 15 and 44 or 15 and 65, the larger is the working population. The availability of child and female labour, the retirement age, and the number of students of working age also influence the size of the labour force. If the number of students of working age is large, the labour force would be small; if the retirement age is high, the labour force would be large.

The Malaysian labour force figures for 1965 are given below. More than two and a half million persons, or about 83% of the labour force was found in West Malaysia whereas Sabah and Sarawak accounted for about 6.3 and 10.4% respectively.

West Malaysia	2,678,000
Sabah	214,000
Sarawak	334,000
Malaysia	3,226,000

The projected figures for the labour force and employment up to 1985 are given in Table 2.1. By 1985, the labour force would have increased from about three million to more than five and a half million or an increase of 43 per cent. The employment figure, on the other hand, would have increased by 67% from about three million to more than five million.

Difficulties were encountered in analysing the data especially with regards to concepts such as "in employment", "economically active" etcetera, but by adherement to definitions,[1] this difficulty was overcome.

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[1] See Appendix IV.

TABLE 2.1

MALAYSIA - PROJECTED FIGURES FOR LABOUR FORCE AND EMPLOYMENT

	LABOUR FORCE		EMPLOYMENT	
Year	Labour Force in Thousands	Percentage rate of Annual Growth	Employment in Thousands	Annual Percentage Rate of Growth
1965	3,226		3,050	
		2.7		2.8
1970	3,690		3,530	
		2.8		2.8
1975	4,230		4,020	
		2.9		2.9
1980	4,880		4,690	
		3.0		3.0
1985	5,660		5,430	

Source: First Malaysia Plan, p. 61.

Note: The Percentage Growth for both the Labour Force and Employment have been given as 2.9% for the perspective plan period (1965/85).

2.2 The Non-Economically Active Population

Table 2.2 shows the proportion of active and non-active persons of each race in West Malaysia.[2]

For both sexes, the Chinese have the lowest proportion of economically active population (48.8%) and the Indians have the highest (68.0%). The Malaysians, with 49.4% occupy an intermediate position among the three major races. In other words, the Indians have the largest number of economically active whilst the Chinese have the smallest.[3]

The non-economically active population is composed of

[2] For definitions of economically active and non-economically active, see Appendix IV.

[3] The reasons for the wide disparity of the non-economically active between the various races are dealt with in Section 2.3

TABLE 2.2

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE AND THE NON-ACTIVE POPULATION BY RACE AND SEX

RACE	PERSONS		MALE		FEMALE	
	Active	Non Active	Active	Non Active	Active	Non Active
Malaysians	49.4	50.6	75.4	24.6	24.1	75.9
Chinese	48.8	51.2	70.9	29.1	24.9	75.1
Indians	68.0	32.0	82.5	17.5	45.6	54.4
Others	60.4	39.6	84.4	15.6	18.2	81.8
All Races	51.5	48.5	74.8	25.2	26.2	73.8

Source: Adapted from: Fell, On.cit.

Note: Data includes Population above ten years of age.

houseworkers, students, pensioners and a residual category. The largest number is found among the home houseworkers and those in the 15-44 age group form the larger category. Females predominate and only 0.9% of the men in the 15-44 age group and 2.1% in the 45 and above age group are in this category of non-active. All the students are concentrated in the 15-44 age group and the males with 9.1% surpasss the females with only 3.8%. The "retired" and the "others" consisting largely of people with no occupation or indeterminate occupation are mostly found in the older age group.

In Sabah about one-third of the population in 1960 was classified as non-active. The Other Indigenous and the Chinese with 42.5 per cent and 41.4 per cent formed the largest number of non-active population. A large portion of the non-active was found among the home houseworkers as in the case of West Malaysia. The Murut, with 18.4%, formed the smallest percentage of non-active, followed closely by the Dusun with 20.3%

The non-economically active population in Sarawak in 1960 amounted to 28.8% and the largest percentage is found among the Chinese with 41.1%. The Malays, with 40.2% have the next highest non-economically active figure while the Sea Dayak with 14.4% have the smallest percentage of non-active.

TABLE 2.3

WEST MALAYSIA - THE NON-ECONOMICALLY ACTIVE POPULATION BY CATEGORY, SEX AND AGE, 1957

	15 - 44			45 and over		
	Persons	Male	Female	Persons	Male	Female
Home						
Houseworkers	32.48	0.9	64.4	27.72	2.1	60.0
Students	6.5	9.1	3.8	-	-	-
Retired	0.2	0.33	0.22	4.6	5.2	3.8
Others	1.1	1.4	1.6	5.9	5.0	4.6

Source: Adapted from Fell, Op.cit.

TABLE 2.4

EAST MALAYSIA (SABAH) PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY AND THE NON-ECONOMICALLY ACTIVE POPULATION, 1960

Community	Active	Inactive
Dusun	79.7	20.3
Murut	81.4	18.4
Bajau	62.0	38.0
Other Indigenous	57.5	42.5
Chinese	58.6	41.4
All Others	75.1	24.9
Total Population	68.8	31.2

Source: Noakes, Op.cit.

Note: Data refers to those above fifteen years of age.

TABLE 2.5

EAST MALAYSIA (SARAWAK) PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE AND THE NON-ECONOMICALLY ACTIVE AGED 15 AND OVER, 1960

Community	Active	Inactive
Malays	59.8	40.2
Melanaus	66.9	33.1
Sea Dayaks	85.6	14.4
Land Dayaks	76.5	23.5
Other Indigenous	76.3	23.7
Chinese	58.9	41.1
Others	66.8	33.2
Total Population	71.2	28.8

Source: Adapted from Jones: The Report on the 1960 Census of Population of Sarawak.

2.3 The Economically Active Population

The economically active population comprises both people who are working, and people who are not working but looking for work. Table 2.6 illustrates the percentage distribution of the economically active population by race and sex.

The Malaysians with more than 47% made up the largest proportion of the economically active population in 1957. The Chinese with more than 35% made the second largest contribution. The reason for the large number of Malaysians is that most of them are employed as farmers in the rice growing states/so that all the members of the family tend to make a contribution towards economic activity. The comparatively smaller percentage of Chinese is due to the fact that a large number of Chinese youths is found in schools and that there are a larger number of Chinese with independent means of livelihood. In terms of sex, the males are more economically active than the females. The Indian females, with 26.3% form the highest percentage of economically active females.

TABLE 2.6

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE POPULATION BY RACE AND SEX, 1957

Race	% Distribution by Race			% Distribution by Sex		
	Persons	Male	Female	Persons	Male	Female
Malaysians	47.28	75.4	24.6	100.00	75.34	26.66
Chinese	35.66	75.5	24.5	100.00	75.51	24.49
Indians	14.46	73.7	26.3	100.00	82.52	17.48
Others	2.60	89.1	10.9	100.00	89.07	10.93
All Races	100.00			100.00		

Source: Fell, Op.cit.

Percentage distribution in terms of sex shows a fairly uniform pattern with males forming between 70% and 83% of the economically active, and females forming the remainder. Of exception is the case of the others. Here, more than 89% of the males are economically active, while only 10.93% are females. The Indians, with 82% of the males economically active, are also the most economically active among the three major races as shown in Table 2.2. Exactly 68% of the Indians are economically active while the figure for the Chinese and Malaysians is less than 50%. The reason for this high percentage figure is that the Indians, who are mostly employed as labourers on estates, tend to supplement the family income by sending women to work and taking children off schools to earn a living. Also, many aged return to India resulting in a smaller proportion of economically inactive to economically active population.

The 1967 data for economically active in West Malaysia can be derived from Table 2.7. Using the definition of economically active given in Appendix 2.1, it is found that 63.2% of the working age population (15-65) is economically active. In terms of sex, the males with 86.8% far surpass the females with only 40.3%. It is also interesting to note that the labour force (excluding (b)) amounts to 63.2% of the working age population.

It is also found from the table that nearly 6% of the labour force is unemployed ('a' and 'b'). Hence the unemployed percentage figure has not changed since 1965 (when the figure of

6% also prevailed). It may, however, be bigger in absolute terms. Underemployment, although not revealed in the table, is another characteristic of the labour force. This is found mainly in rural areas where the labour force on the farms is in excess of what is actually required.

TABLE 2.7

WEST MALAYSIA - EMPLOYED, UNEMPLOYED LABOUR FORCE AND TOTAL POPULATION (15-65), 1967

	Total		Males		Females	
	Number	%	Number	%	Number	%
Employed	2,439,925	58.8	1,671,582	81.9	768,343	36.5
Unemployed(a)	180,867	4.4	100,461	4.9	80,406	3.8
Unemployed(b)	54,828	1.4	14,774	0.7	40,054	1.9
Labour Force	2,675,620	64.6	1,786,817	87.5	888,803	42.2
Outside Lab. Force	1,473,569	35.4	255,323	12.5	1,218,246	57.8
Total Population (15-65)	4,149,189	100.0	2,042,140	100.0	2,107,049	100.0

Source: Malaysia: Socio-economic Sample Survey of Households 1967/68. Provisional Data on Employment and unemployment, West Malaysia, 1967 (Department of Statistics, Kuala Lumpur).

Note: (a) Actively looking for a job.

(b) Not Actively looking for a job but will accept one if offered.

Important measures of economic activity are Age-Specific Economic Activity Rates.[4] These are computed separately for males and females in Table 2.8 and are graphically represented in diagram

[4] These are percentage calculations of economically active population in an age group to the total population in that same age group.

2.1.[5] It is apparent from the figure that the rates for both sexes have a similar pattern beyond the 35-44 age group. But for the 15-24 age group, the curve for the males shows a rising trend whereas that of the females falls. In other words, the female age group of 25-34 shows a smaller percentage of economically active than those before and beyond it. One possible explanation is that this is the age group having the highest proportion of newly married females so that the probability of pregnancy is high. As such large numbers of females are in confinement so that they are enumerated as economically inactive.

TABLE 2.8

WEST MALAYSIA - AGE SPECIFIC ECONOMIC ACTIVITY RATES, 1957

Age Group	Males	Females
15-24	74.9	29.4
25-34	97.6	28.9
35-44	97.5	34.7
45-54	95.1	35.1
55-64	85.7	26.3
64 and over	60.8	11.5

In East Malaysia, 71% of the population in Sarawak and 69% in Sabah is economically active. A close study reveals interesting contrasts between the two states, and between the races, and, of course, between the sexes. Naturally, more men than women work but a high percentage (60%) of the women among the Indigenous peoples of Sarawak are economically active. The Chinese figure of the percentage of males economically active in both states is surprisingly small relative to the figures for the Indigenous and the Others. This implies that the Chinese community has comparatively more students, old-aged and retired persons than the other communities.

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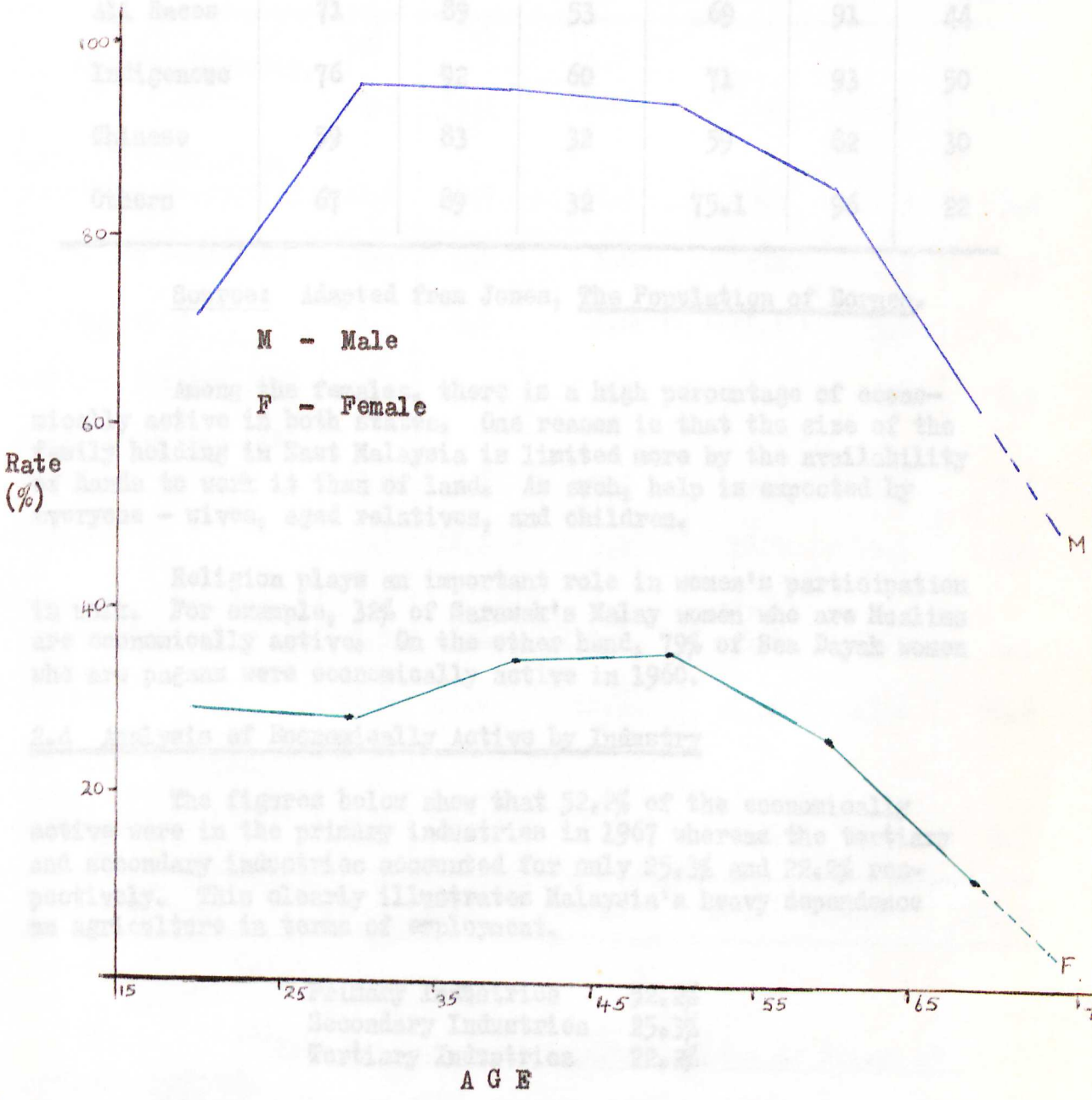
[5] For a detailed study of these curves see United Nations: "Demographic Aspects of Manpower," Report I, and "Participation in Economic Activities", Population Studies, No. 33, New York, 1962.

DIAGRAM 2.1

WEST MALAYSIA - AGE SPECIFIC ECONOMIC ACTIVITY RATES, 1957



Source: Table 2.8

TABLE 2.9

EAST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE POPULATION BY RACE AND SEX, 1960

Community	SARAWAK			SABAH		
	Male & Female	Male	Female	Male & Female	Male	Female
All Races	71	89	53	69	91	44
Indigenous	76	92	60	71	93	50
Chinese	59	83	32	59	82	30
Others	67	89	32	75.1	96	22

Source: Adapted from Jones, The Population of Borneo.

Among the females, there is a high percentage of economically active in both states. One reason is that the size of the family holding in East Malaysia is limited more by the availability of hands to work it than of land. As such, help is expected by everyone - wives, aged relatives, and children.

Religion plays an important role in women's participation in work. For example, 32% of Sarawak's Malay women who are Muslims are economically active. On the other hand, 79% of Sea Dayak women who are pagans were economically active in 1960.

2.4 Analysis of Economically Active by Industry

The figures below show that 52.2% of the economically active were in the primary industries in 1967 whereas the tertiary and secondary industries accounted for only 25.3% and 22.2% respectively. This clearly illustrates Malaysia's heavy dependence on agriculture in terms of employment.

Primary Industries	52.2%
Secondary Industries	25.3%
Tertiary Industries	22.2%

The distribution of the economically active by industry is given in greater detail in Table 2.10. The data reinforces the fact showing the importance of agriculture. But this importance has been reduced since 1957 when more than 57% were agriculturally employed, for ten years later as mentioned above, agriculture

TABLE 2.10

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE BY INDUSTRY, RACE AND SEX, 1957, 1967

Industry	All Communities		1957 Main Communities			
	1957	1967	Malaysians	Chinese	Indians	Others
	(a)	(b)				
Agriculture, Forestry, hunting, fishing	26.5	21.3	44.9	13.1	1.4	13.4
Agriculture products requiring processing	31.1	30.9	28.3	27.1	54.3	5.4
Mining and Quarrying	2.7	2.8	1.0	5.2	2.2	2.5
Manufacturing	6.3	8.5	2.6	12.6	3.2	2.2
Building Construction	3.2	3.4	2.1	4.2	4.0	2.5
Electricity, gas and water	0.5	0.7	0.4	0.4	1.3	0.1
Commerce	5.3	10.6	3.1	16.5	10.5	5.9
Transport, storage, communication	3.5	3.9	2.6	3.8	5.1	4.7
Services	14.8	17.6	12.5	14.2	15.4	60.6
Activities omitted, inadequately described	0.8	0.2	0.6	1.2	0.8	0.8
(c)	100.0	100.0	100.0	100.0	100.0	100.0

Source: (a) Fell, Op.cit.

(b) From Malaysia - Socio-Economic Sample Survey of Households 1967/68.

Note: (c) - 1957 data does not add up to 100 because those not working but looking for work have been omitted.

accounted for only about 52%. On the other hand, the services with about 15% of the economically active in 1957 accounted for more than 17% in 1967. Manufacturing, construction and electricity, gas, water and sanitary services also made significant gains. All this implies that agriculture is gradually becoming less important as a source of employment and that industrialization is working some headway.

Unfortunately, data for the occupational distribution of the economically employed in terms of communities is not available for 1967. The following analysis, will, therefore, be based only on the 1957 data. Agriculture is important for all the three major races in West Malaysia but more so for the Malaysians, 70% of whom are agriculturally employed. The reason, as discussed in Chapter I (section 1.1) is that the Malaysians are found concentrated mainly in rural states and since the rural areas are mainly agriculturally orientated, it is natural that the Malaysians should be mostly agriculturally employed. It is notable that a larger percentage of Indians are agriculturally employed relative to the Chinese. Many of the former are either tappers, weeders or clerks in the rubber or palm oil estates which are the main sources of employment.

By 1968, however, the importance of agriculture had further dropped to only about 50% of the economically employed, the rubber industry being the main source of employment.[6]

The distribution of the economically active by industry (Table 2.11) in East Malaysia shows the same pattern as in Western Malaysia. The main concentration is found in agriculture and related industries. These account for more than 80% of the economically active in both the East Malaysian states. The Indigenous and the others dominate agricultural activity, while the Chinese are prominent in agriculture, in the services and in commerce. There is, however, a difference between the Malaysians and the Others engaged in agriculture especially in Sabah. Here the others consisting mainly of Indonesians and Filipinos are engaged mainly in timber camps or rubber estates whilst the Indigenous are found mainly on their own farms, cultivating mainly rice or rice with other crops.

2.5 Analysis of Economically Active by Occupation

Occupation may be described as the kind of work done by a person, such as a builder or farmer and is different from the industry in which he is occupied. The latter refers to the trade or business in which the person is working.

The fact that Malaysia is predominantly an agricultural nation has already been noted in the previous section which shows

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[6] Malaysia - Socio-Economic sample survey of Households, 1967/68.

TABLE 2.11

EAST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE POPULATION BY COMMUNITY AND INDUSTRY, 1960

INDUSTRY	SARAWAK				SABAH			
	Total Population	(a) Indig.	Chinese	Others	Total Population	(b) Indig.	Chinese	Others
Agriculture, Forestry, hunting, fishing	81.4	91.0	51.1	56.4	80.5	92.0	39.5	76.7
Mining and Quarrying	0.8	0.7	1.1	4.1		0.2	0.3	1.0
Manufacturing	3.9	2.2	9.9	2.5	3.8	1.8	11.5	3.4
Building and Construction	1.6	0.9	3.4	7.8	2.5	1.1	7.2	3.8
Services	5.5	3.2	12.2	15.2	5.7	2.8	16.1	7.9
Commerce	4.7	0.8	17.2	10.3	4.4	0.7	19.4	2.7
Transport and communication	1.9	1.0	4.9	3.2	2.6	1.4	6.0	4.5
Electricity, water supply, sanitary services	0.2	0.2	0.3	0.6	0.2	0.1	0.4	0.2
Other Industries					0.5	2.7	15.7	7.7

Source: Calculated from Reports on the Censuses of Sarawak and Sabah, 1960.

Note : (a) - Includes the Malays, Melanaus, Sea Dayaks, Land Dayaks and other indigenous.
(b) - Includes Muruts, Dusuns, Basaus, Malays and other indigenous.

that about 60% of the population is in agriculture. It is natural, therefore, that in terms of occupation, the main stream should consist of farmers, fishermen, rubber tappers, weeders, timber camp workers, hunters and others.

The occupational distribution of population in West Malaysia for 1957 and 1967 given in Table 2.12 is subject to certain cautionary remarks which also apply to East Malaysia. Many individuals follow more than one occupation during the year; the distribution of population by occupation differs according to the time the census is held, and there is a tendency among some individuals to exaggerate their skills, abilities and responsibilities. This results in too many persons being recorded as technical and professional workers. For example, clerks claiming to be accountants, shop assistants calling themselves salesmen and electrician mates reporting themselves as electricians.

The table reveals that there has been a significant fall in agricultural occupations amounting to nearly 6% in the decade 1957 to 1967. Transport and communication occupations were also reduced in importance whereas sales and related occupations and clerical occupations were among those which recorded an increase. Data for occupational distribution in terms of communities which is available for only 1957 shows that with the exception of the Chinese, the percentage figure in agriculture for the three main communities exceeds 50%. The next major occupational group among all the communities are craftsmen, production process workers and labourers. Since the Malaysians and the Indians are rural orientated, it is probable that they are concentrated more among production process workers and labourers. Miners, quarrymen and related occupations account for the smallest percentage. Sales and related occupations appear quite popular among the Chinese accounting for nearly one-fifth of the community whereas only about one-tenth of the Indians and about 3% of the Malays are thus employed.

The pattern in East Malaysia (see Table 2.13) is also similar with 81% of the economically active in Sarawak and about 77% in Sabah being employed in agricultural occupations. More than 90% of the Indigenous people in both states are occupied in agriculture. Agriculture is less important for the Chinese in Sabah in terms of occupation than it is for the Sarawak Chinese. The latter state has more than 50% of the Chinese in agriculture while the former accounts has only about 35%. Occupations such as craftsmen, production process workers and labourers are the next important occupational category in both states with the Chinese being most prominently represented. It is also interesting to note that whilst about 3% of the others and 4% of the Chinese are employed as clerical workers, less than 1% of the Indigenous are so employed. One reason is the lower level of education among the natives. Another is that most of the Indigenous are found only in rural areas. Diversity also exist within the three ethnic groups cited. For example, the Dusuns are skilled rice growers whilst

the Bajans are expert fishermen.

In general, details on occupation give little additional information of use as they generally outline those of industry.

TABLE 2.12

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE BY OCCUPATION, SEX AND COMMUNITY, 1957, 1967

Occupation	All Communities		1957 Main Communities		
	1957	1967	Malaysians	Chinese	Indians
Professional, technical and related occupation	5.09	5.03	2.68	3.89	2.35
Administrative, Executive and Managerial	1.15	1.59	0.43	2.32	0.58
Clerical	2.89	4.24	1.66	4.32	2.98
Sales and related occupations	8.57	9.60	2.89	18.27	9.97
Agricultural	56.44	50.49	74.16	28.99	50.16
Miners, quarrymen and related occupations	0.26	0.86	0.43	0.72	0.89
Transport and Communications	5.14	3.79	2.78	4.08	3.49
Craftsmen, production process workers and Labourers	15.45	17.39	7.74	27.76	31.03
Service, Sport, Entertainment and Recreation	8.63	6.94	7.26	9.26	7.63
Not classifiable by Occupation	0.38	0.07	0.37	0.49	0.30
All Occupations	100.0	100.0	100.0	100.0	100.0

Source: Fell, Op.cit. Malaysia: Socio-Economic Sample Survey, Op.cit

Note: Calculations exclude those not working but looking for work.

TABLE 2.13

EAST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE BY OCCUPATION AND COMMUNITY, 1960

OCCUPATION	SARAWAK				SABAH			
	All Comm.	Indig.	Chinese	Others	All Comm.	Indig.	Chinese	Others
Professional, Technical and Related Workers	2.11	1.08	4.76	6.17	1.8	0.7	23.0	3.4
Administrative, Executive and Managerial Workers	0.34	0.22	0.80	0.46	0.4	0.1	1.0	1.0
Clerical Workers	1.49	0.64	4.16	2.77	2.0	0.5	6.9	3.1
Sales Workers	4.03	0.62	15.20	9.02	3.4	0.5	15.3	1.5
Agricultural Workers, Forestry Workers Fishermen, Hunters, Trappers	81.50	91.33	50.55	55.94	77.3	91.1	34.7	63.3
Miners, Quarrymen and Related Workers	0.06	0.05	1.10	0.17	0.04	(-)	(-)	(-)
Transport and Communication Workers	1.45	0.96	2.96	3.68	2.2	1.3	4.3	4.4
Craftsmen, Production Process Workers and Labourers not elsewhere Classified	6.77	4.00	15.75	14.56	9.7	4.4	23.5	19.2
Service, Sport, Entertainment and Recreation Workers	2.25	1.56	5.71	7.24	1.0	-	-	4.0

Source: Calculated from the Reports on the Censuses of Sabah and Sarawak, 1960

Note : Figures in parenthesis indicates that the percentage is insignificant.

2.6 Analysis of Economically Active by Status

Classification of the economically active by status in West Malaysia was made under three categories in 1957; that is, the self-employed, the unpaid family worker, and the employee.[7] The censuses of East Malaysia carried out in 1960 included an additional category - the employer. It must be noted that the self-employed category comprises both the employee on the one hand the the self-employed worker on the other. Data for West Malaysia is given in the table below.

TABLE 2.14

WEST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE BY STATUS, SEX AND COMMUNITY, 1957

Status	Total Economically Active			Main Communities			
	Persons	Male	Female	Malaysian	Chinese	Indians	Others
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Self Employed	34.3	37.6	24.3	47.9	27.8	9.7	14.3
Unpaid Family Worker	8.3	4.8	18.9	13.9	4.1	0.6	4.1
Employee	56.0	56.0	55.8	36.6	66.8	88.6	80.5
Not Stated	1.5	1.6	1.0	1.6	1.3	1.1	1.1

Source: Fell, Op.cit.

The data reveals that employees comprise the highest proportion among the economically active, followed by the self-employed category. The two sexes also follow a similar pattern. In terms of communities, the Chinese predominate among the self-employed, one reason being that many have their own business enterprises. On the other hand, the Malaysians with about 67% and the Indians with about 89% are more concentrated in the "employee" category, the explanation being that both these races form an important portion of the labour force employed on estates. In the "unpaid family worker" category, the Malaysians predominate, most of them being found on

[7] For definitions of different categories of status, see Appendix IV.

the farms where family members are expected to help in the farm chores.

In both the East Malaysian states, the employer category is the least important but there is a difference with regards the importance of the other three categories of "status". For example, in Sabah, each of the other categories with more than 30% of the economically is more or less equally important. In Sarawak, however, the most important is the "family worker" category followed by the "own account workers" and the "employed" category in that order of importance. Moreover, although the employee category is the least important in Sarawak among the last three categories listed in the table, it is the most important in Sabah. One explanation is that the timber industry forms an important part of Sabah's national output and a large number of economically active are employed on the logging camps as employees.

TABLE 2.15

EAST MALAYSIA - PERCENTAGE DISTRIBUTION OF THE ECONOMICALLY ACTIVE BY STATUS AND COMMUNITY, 1960

Status	SARAWAK				SABAH			
	All Comm.	Indig.	Chinese	Others	All Comm.	Indig.	Chinese	Others
Employer	1.0	1.2	4.1	2.3	1.5	0.3	6.3	0.7
Employee	19.3	12.0	41.2	63.5	34.3	19.5	55.9	85.9
Own Account Worker	38.8	35.0	31.1	22.8	33.0	39.4	24.2	9.8
Family Worker	44.9	51.8	23.6	11.5	31.2	40.8	13.6	3.6

Source: Reports on the Censuses of Population of Sabah and Sarawak, 1960.

An analysis in terms of communities reveals that among the Indigenous in both states, the family worker category is most important in both states followed by the "own account workers", the "employees" and the "employers" in that order of importance. A difference, however, exists. The "family worker" category is far more important among the Indigenous in Sarawak than in Sabah. This is due to the presence of more Muslims in the latter state, for the Islamic religion which is an important factor in women's

participation seems to discourage their having a role in economic activity.

One interesting point is that the working habits of the Sarawak Malays are found to form a contrast to those of the larger and better settled Malay community of West Malaysia. Here, the Malays have been moving away from subsistence agriculture into employment, but even so, Ma[8] commented that the Malaysians do not have a preference for wage employment and that the majority of them work for themselves or their own family units. The background to this remark lies in the large numbers of Malaysians engaged in rice growing, an industry almost exclusive to that group and conducted on a family basis. The suggestion here is that despite the example of the Malays in West Malaysia, the Malays like the Indigenous people of Sabah, are not averse to leaving the traditional work pattern for wage earning, so long as they can do so in their own time. The Chinese, in contrast, have proved avid to leave employment for the family enterprise. This accounts for the large percentage of employees among the Chinese of both states. The Chinese are also important in the "own account worker" category.

2.7 Conclusion

An important fact derived in this chapter is that although there has been a decline in the importance of the primary sector as a source of employment, yet it accounts for a major portion of the economically active in the country. As such, the future development of the country still depends on the primary sector as a base upon which industrialization and economic development will take place. It is, and will still be for some time in the future, the main source of funds which can be channelled into other fields.

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[8] Ronald Ma and You Poh Seng, The Economic Characteristics of the Population of the Federation of Malaya, 1957. The Malayan Economic Society, Vol. V, No. I, April 1960.

CHAPTER III

POPULATION GROWTH AND ECONOMIC DEVELOPMENT - SOME THEORIES AND APPLICATIONS

3.1 Introduction

Establishing a correlation between economic development and population growth (and vice versa) is a difficult task. A mathematical equation relating population growth and economic development, and also incorporating the other intervening variables is difficult to formulate due to the large number of variables involved. In fact, some writers claim that there is no proof of an inevitable causal connection of an economic character between the phenomena. They also maintain that it is a serious mistake to assume that the rate of population growth acts directly as an economic cause in stimulating or depressing economic growth. These view points will be discussed in this chapter.

The main concern here with will be to undertake a theoretical analysis. In other words, the various theories relating population growth to economic development will be discussed. An attempt will then be made to assess the relevance and the shortcomings of such theories in the Malaysian context. An analysis in factual terms with regards to the relationship between the two variables will also be undertaken.

3.2 Effects of Economic Development on Population Growth

The Classical School

The classical economic theory of population growth as formulated by economists such as Malthus, Mills, Ricardo and others held that a rise in income, particularly among the poverty stricken classes, tends to increase birth rates and decrease death rates. These economists describe the hypothesis as a chain reaction of events and claim that this chain is circulatory in nature.

The basic proposition in the classical school of thought was that the size of the labour force depended on the size of the wage bill, the so-called "iron law of wages".[1] In other words, the

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[1] For a detailed study of the classical Doctrine see Benjamin Higgins, Economic Development, Principles, Problems and Policies, (Constable & Co. Ltd., London) 1959.

rate of population growth (the labour force and the population were generally conceived to vary together) depended on how much money (working capital) was available to pay wages. If the total wage bill was increased and real average rates rose above subsistence level, then large numbers of working class children would survive. The increased population would consequently force wage rates to return to the subsistence level. This functional relationship between population growth and wage rates is represented in equation form below where the population (P) is shown to be a function of wages (W).

$$L = f(W)$$

The wage bill was in turn assumed to be a function of the level of investment, for the classicists believed that a part of capital (used for investment) consisted of a wages fund or the amount of money available for the hire of labour. This argument, too, is represented in equation form below where W stands for wages and I for investment:-

$$W = f(I)$$

Investment, (that is, the net additions to capital) on the other hand, depended on profits which the capitalists expected to earn. That is,

$$I = f(R)$$

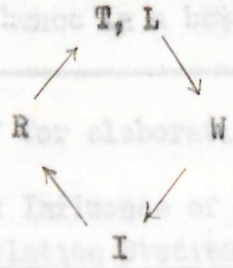
Where R is the rate of return on fixed factors of production (land labour), or in other words, profits.

To close the circulatory flow, profits were said to be the outcome of a race between technological progress and population growth. With the increase in population, diminishing returns were encountered in agriculture, raising labour costs and reducing profits i.e.

$$R = f(T, L)$$

which means that the level of profits (R) is a function of technological progress (T) and the size of the labour force.

The circulatory argument now becomes evident and is given below:



One can break into any part of the circle presented above and predict the chain of events that would follow, or, in other words show the relationship between population growth and economic development. For example, an increase in profits brings about an increase in investment (and so an addition to the stock of capital) which permits capitalists to take advantage of the steady flow of improved technique and so raises the wage fund. This brings about accelerated population growth causing decreasing returns to labour on land, raises labour costs and decreases profits. This reduction in profits would lead to a reduction in investment, retard technological progress, diminish the wage fund and slow down population growth.

One way argue that this theory cannot be applied to Malaysia because a great deal of complex biological, psychological, sociological and technical factors which enter into family size are unknown. Nevertheless, certain conditions existing in the rural areas fit into the classical pattern in certain aspects. For example, in the last equation it is mentioned that increasing population leads to diminishing returns to scale in agriculture. This is particularly true in Malaysia where the poverty-stricken peasants insure themselves against suffering in old age by having as many children as possible. A greater number of children leads to the inheritance of smaller plots of land from parents. These plots are subject to diminishing returns due to widespread existence of underemployment.[2]

The claim that higher wages increase the labour force is, however, difficult to accept. It is probable that a person with a larger income would feel more secure and hence have less children instead of more. One could extend this argument by saying that a farmer with a larger plot of land would have less children as he would have a larger income. Unfortunately no data is available showing the possibility of such a correlation in Malaysia. However, a study was made by W. Stys[3] in 1948 to study the correlation between the size of peasant holdings and the size of peasant families in Southern Poland. The author based his inquiry on twenty villages and found that the larger the holding, the larger was the average number of children in the farm-owning family. But he also found that the landless peasants had more children than those with holdings of about one acre. These two facts are difficult to reconcile and accept as valid in Malaysia. It is most probable that the poorer Malaysian peasants (referring to all the races in Malaysia), have larger families than the richer ones as the latter are in a better position to obtain an education, more susceptible to modern influences and hence in a better position to appreciate

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[2] See Chapter IV for elaboration of this problem.

[3] W. Stys - "The Influence of Economic Conditions on the Fertility of Women", Population Studies, Volume II, 1957/58.

the advantages of having a smaller family. There is some truth in the classical argument that the returns to labour are dependent on the investment a farmer makes and that this is in turn a function of the amount of profits obtained. Thus, if only a small profit is made, then, after the satisfaction of subsistence requirements only a small amount will be available for investment.

This situation, however, has been modified to a certain extent by the establishment of such bodies as the Federal Agricultural Marketing Authority (FAMA), and the Majlis Amanah Ra'ayat (MARA). These institutions provide loans, grants and services of various kinds to farmers so that investment by farmers does not necessarily depend on profits made but on the availability of funds from these organisations. The situation is bound to change further once the scheme for rural industrialization planned by the Capital Investments Committee is launched.[4]

One can conclude, therefore, that although some truth exists in the classical theory, it cannot be accepted in its entirety as far as the Malaysian environment is concerned.

The Theory of Demographic Transition

This theory envisages an agrarian peasant economy with high birth and death rates, self-sufficient and non-market orientated in nature. The birth rates are assumed to remain relatively high whereas death rates being a consequence of poor diets, primitive sanitation and the absence of preventive medicine are assumed to fluctuate in response to variations in crop yields and the varying incidence of epidemics. The high birth rates are said to be a result of social beliefs and customs and due to the security of having a large number of children in a peasant economy.

The proponents of the theory further assert that economic development has the effect of evolving the predominantly agrarian peasant economy to one with a greater division of labour; a transformation towards the use of better techniques; greater urbanization; and greater orientation towards the market for the sale of products. Moreover, various factors such as improvements in transport, an increase in productivity, regularity of food supplies, and improvements in the medical field, which can only come about with economic development, are believed to be responsible for the ensuing decline in death rates. The proponents of the theory also believe that the will to accept sanitary water supplies, a modern sewage system and the like are likely to exist only in an industrial rather than in an agrarian society.

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[4]See the Straits Times, 27th June, 1969 - "A Blue Print for Village Factories", p. 1.

It is further believed that only in advanced economies are there means for the construction of a large number of hospitals, and for educating and training large numbers of doctors. Further, with the breakdown of customs and beliefs, children are believed to be more of a burden and less an asset in the greatly expanded urban settings. The custom of the small family hence spreads from urban groups to smaller cities, to lower income groups, and eventually to rural areas. In short, birth and death rates are reduced and so is the increase in the population. But decline in birth rates is believed to occur after a substantial time lag in comparison to the decline in mortality rates. This slower response of the birth rate to economic change is attributed to the fact that a fertility decline depends more strongly on the alteration of long-established customs and institutions. In this way the two rates pursue a more or less parallel downward course with the decline in the birth rate lagging behind. Finally, as further reductions in the death rate become more difficult to attain, the birth rate again approaches equality with the death rate and a more gradual rate of growth is re-established, with, however, low risks of mortality and small families as the typical pattern.

The Theory of Demographic Transition[5] seems the most appropriate formulation available in describing the course of events, now developing in Malaysia. However, a detailed evaluation of the theory reveals that it is not an accurately exact description of what is actually occurring. The main flaw over the precise applicability of the theory lies in the claim that a significant reduction in the death rate can only come about through a major change in society. In Malaysia the death rate has been reduced while birth rates have remained essentially unchanged without any modification of the present agrarian structure, or a major reorganisation of the peasant economy. Drastic reductions in death rate or mortality have been achieved at low cost - in the absence of any wholesale social organisation - through innovations in public health. Examples include the development of antibiotics and insecticides which help prevent diseases such as malaria, yaws and tuberculosis; the evolution of effective public health organisations, and the invention of suitable low-cost methods of sanitation such as inexpensive hand-flush latrines.

Another shortcoming in the theory is that it does not state precisely what conditions are essential for decline in fertility. One possible explanation is that since mortality in under-developed countries occurs typically in childhood, it is probable that the average family size will increase as mortality declines. As such, the motives of insuring family continuity and of obtaining support

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[5] For a detailed study of the Theory of Demographic Transition, see Population Growth and Economic Development in Low Income Countries, by Ansley J. Coale and Edgar M. Hoover (Princeton University Press), 1958.

for old age can be satisfied with a smaller number of births since there is no necessity now to replace the offspring dying in infancy.

3.3 Effects of Population Growth on Economic Development

The Communist Doctrine

Marxism or Communism related population growth and economic development to the kind of political ideology that a country adopted. This doctrine claims that manpower is an asset to economic development and that communism is in fact the only remedy because it alone can guarantee the creation of employment opportunities as fast as, or faster than man can reproduce. As such, the communists continuously denounce the poverty of the people in under-developed countries such as Malaysia as arising out of exploitation by capitalists and imperialists who are supposedly unable to achieve what communists can.

The absurdity of applying such a theory to Malaysia is obvious. It is difficult to argue that a rapidly increasing Malaysian population could become an asset to the Malaysian economy just by an alteration of the political system to communism. If such were the efficiency of the totalitarian economy in harnessing manpower to fruitful ends, then North Korea and Communist China should be among the richest nations in the world. In reality, however, North Korea seems lagging economically as compared to the South Korea. And China in fact undertook to reduce the birth rate by an intensive propaganda campaign between 1954 and 1958, urging the use of contraceptives.

The Optimum Population Theory

The Marxian or Communist theory dealt with above does not give a realistic picture of the relationship between the two variables being dealt with. In fact three aspects of population growth - its size, its growth rate, and its age distribution must be studied if an assessment of the effects of population growth on economic development is to be made.

The relationship between population size and economic development is best shown by the Optimum Population Theory. The optimum population for a country has been defined by one source as the amount of labour which, combined with other factors of production yields maximum output.[6] As such, the "optimum population" of a country depends on its natural resources and stock of capital. A country with a population falling short of the optimum can be considered under-populated; if the population exceeds optimum, the

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[6] J.L. Harison, A Textbook of Economics (3rd Edition; Macmillan & Evans, Ltd., London), 1961, p. 81

country is over-populated. On the other hand, a country poor in natural resources and lacking capital may be economically over-populated even though it has a small population.

The concept of an "optimum population" is illustrated in diagram 3.1.[7] This is based on certain assumptions - that the state of technology is given and that other factors of production are constant. The per capita product finds its maximum where the straight line through the origin (OM) is tangential to PP_1. This occurs at population P_1. The subsistence requirements of a population are expressed by the straight line OS. The surplus above subsistence reaches a maximum at P_2. This population, at P_2, is termed as the population of "maximum power".[8]

However, certain defects exist in this notion of "optimum population". The most serious is the assumption of constancy in both the supplies of other factors of production and the state of technology. For example, the assumption of a fixed amount of capital (which is one of the factors of production - all of which are assumed constant) would lead to the conclusion that a larger population would be uneconomical even in a country with a wide land area. In fact, as population increases, capital would also probably be formed so that production increase would not appear as illustrated by the curve PP^1. The movement will be above this curve, the more so, the more rapid is the rate of capital accumulation. Moreover, the rate of population growth and capital accumulation are not independent of each other. For example, population expansion is likely to be an incentive to investment up to a certain point. This is shown in diagram 3.2. The curve TT_1 shows that net investment increases with an increase in population up to point Z. On the other hand, a high population growth would increase the dependency burden, reduce savings and hence reduce investment. This occurs beyond point Z. This means that net investment is related to the rate of population growth by a function taking the shape of an inverted U.

It is difficult to say whether Malaysia is now in the "optimum population" stage. The present population size could in fact be the "optimum" if available resources are properly utilized. But due to the shortcomings in the theory, it would be inappropriate to apply it to Malaysia where population growth is accompanied by capital formation.

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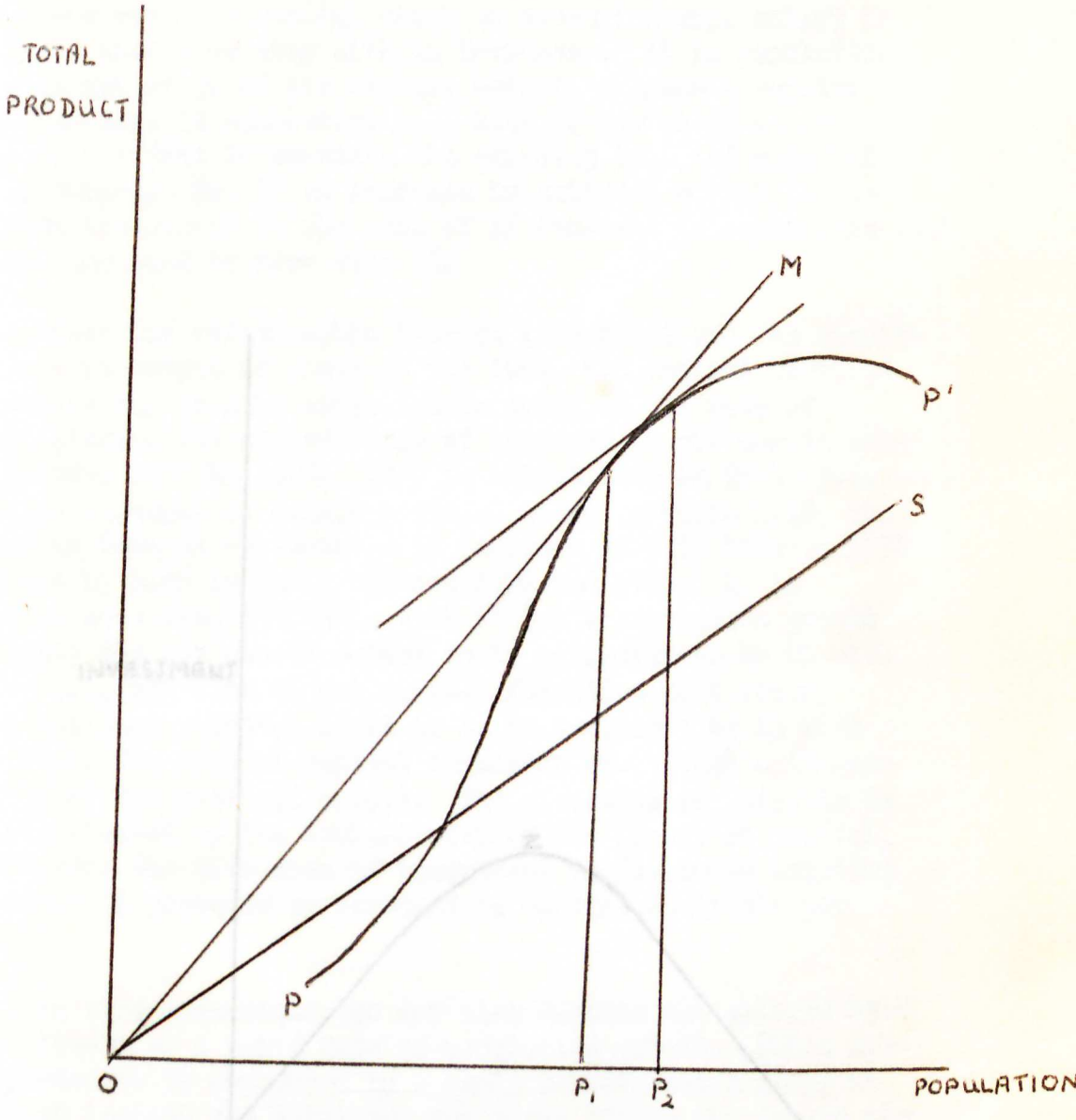
[7] See Gohran Ohlin: Population Control and Economic Development (Development Centre of the Organisation for Economic Cooperation and Development, Paris), 1967, p. 62.

[8] Quoted by Gohran Ohlin from "Théorie Générale de la population", by Alfred Sauvy (Paris, 1956, I, p. 60).

DIAGRAM 3.1

THE OPTIMUM POPULATION THEORY

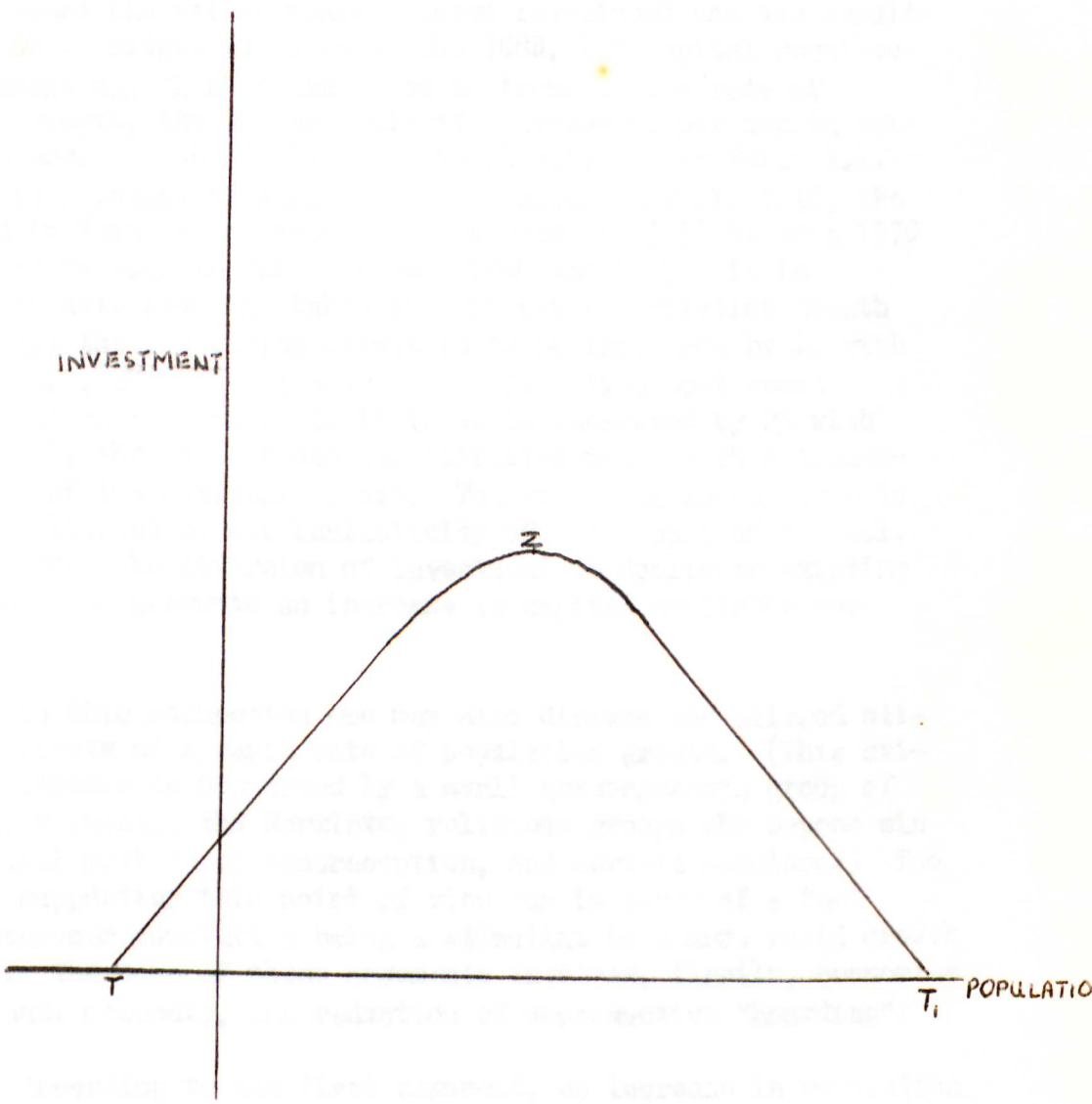


PP_1 - Output

Note: This is a modification of the diagram given in the original source (see footnote 7, this chapter).

DIAGRAM 3.2

POPULATION GROWTH AND INVESTMENT



The population growth rate is the second factor that must be considered in studying the effect of population growth on economic development. The argument is that a higher level of investment is necessary in attaining a given amount of output per capita if a higher rather than a lower rate of population growth exists. This is because a faster growth rate in population does not in any manner contribute to a greater supply of investible resources. For example, if the incremental capital output ratio (ICOR), or the ratio of capital stock to current annual output is three to one; then a country with an increase of 1% in population will have to invest 3% of its current output, whereas a country with a 3% increase in population will have to invest 9% of its current output - just to maintain the existing level of national product or output. But if an increase in national output is required, then investment in the case of 1% increase in population will have to be increased by more than 3%.

Since the relationship between investment and the resultant increase in output is known as the ICOR, the capital required for investment may then be explained in terms of the rate of population growth, the derived rate of increase in per capita output (or income) and the ICOR. This is illustrated in Table 3.1. The table is relevant to Malaysia for as shown in Table 1.18, the population in Sarawak is expected to increase by 3.5% between 1970 and 1980 and by 3.8% in Sabah between 1980 and 1985. It is important to note from the table that if (at a population growth rate of 3.5%) the per capita output is to be increased by 1% with an ICOR of 3.5, the rate of net capital formation must reach 15.75% of national output. If it is to be increased by 2% with the same ICOR, the rate of capital formation must reach a tremendous 19.25% of the national output. The situation in Malaysia is further complicated by the inelasticity of the supply of capital, for this forces the diversion of investment to duplicate existing facilities which prevents an increase in capital available per worker.

In this connection one may also discuss the alleged stimulating effects of a rapid rate of population growth. (This stimulant hypothesis is supported by a small heterogeneous group of people which include the Marxists, religious groups who oppose sin and unnatural methods of contraception, and certain scholars.) Two arguments supporting this point of view run in terms of a fast growing consumer population being a stimulant to a more rapid growth of output. The core of these arguments involves, firstly, economies of scale and, secondly, the reduction of unproductive "hoarding".

According to the first argument, an increase in population would increase the size of the consumer market so that with organisation becoming more economical productivity per head would increase. This argument, however, would only fit an "under-populated" with large undeveloped resources and a sparse population possessing

advanced techniques, entrepreneurship, skilled manpower, and access to capital. This was the case of the United States during the early years of its development. But under-developed countries like Malaysia are not characterised by sparse populations. As such one cannot generalize by applying the argument to all countries, for then India and China would apparently already be in a practically unrivalled position of advantage.

TABLE 3.1

CAPITAL REQUIREMENTS (% OF NATIONAL OUTPUT) FOR A GIVEN ANNUAL RATE OF INCREASE IN PER CAPITA OUTPUT (ON ASSUMPTION OF INCREASE IN POPULATION OF 3.5% PER ANNUM

% Increase of per capita output required	I C O R								
	0.5	1	1.5	2	2.5	3	3.5	4	4.5
0	1.75	3.5	5.25	7	8.75	10.3	12.25	14	15.75
1	2.25	4.5	6.75	9	11.75	13.5	15.75	18	20.25
2	2.75	5.5	8.25	11	13.75	16.5	19.25	22	24.75
3	3.25	6.5	9.75	13	16.25	19.5	22.75	26	29.25
4	3.75	7.5	11.25	15	18.75	22.5	26.25	30	33.75
5	4.25	8.5	12.75	17	21.25	25.5	29.75	34	38.25

Source: Saw Swee Hock, The Population of Singapore and its social and economic implications; 1960.

The second argument implies that the additional population leads consumers to spend a larger proportion of their incomes and save or hoard less. The resultant increase in effective demand makes investment more profitable so that investment, employment and output all rise. However, this argument is more applicable only to an advanced industrial economy. In such an economy decisions to save and invest are made mainly by different people. As such progress (before the increase in population) may be slowed if attempted savings exceed attempted investment so that underemployment of resources occurs. In this situation a spurt in population may remedy the shortcoming by stimulating greater

expenditure on the part of the savers and greater investment in facilities necessary for the additional population.

But this argument cannot be applied to Malaysia which is already burdened with a population problem and a deficiency in the mobilization of domestic capital. Moreover, the defect in Malaysia does not lie in any reluctance to spend incomes but in the availability of skilled labour, enterprise and cooperation.

The third factor that enters the discussion in analysing the effect of population growth on economic development is population distribution by age. The point is that the higher is the proportion of population in the younger age groups, the greater is the dependency ratio.[9] This reduces the proportion of those available for productive work. The employment of children which is so common in the agrarian economy of Malaysia in no way increases the efficiency of output. Moreover, the necessity of supporting large numbers of children during the part of their lives when they only consume and do not produce has a retarding effect on economic progress. A reduction in population growth (or birth rate) in such a situation would reduce the number of dependents without affecting the numbers in older age groups so that the dependency ratio is reduced and resources are released for economic expansion.

It is important to understand that although the three demographic factors said to affect economic growth have been dealt with separately, in reality these factors are never independent. For example, a rise in birth rate would increase population size and also affect the age distribution pattern.

In general, it is found that population growth is regarded both as a stimulant and as an obstacle to economic growth. The obstacle hypothesis is more fashionable at present than the stimulant hypothesis. In conclusion, it is important to draw inferences gathered from the two theories.

Both hypotheses are normally presented as arguments for presuppositions rather than as inductions from actual experience. A study of the more prevalent obstacle theory was undertaken by Simon Kuznets[10] in his six lectures on Economic Growth. In order to study the relationship between population growth and economic development, Kuznet took two groups of countries and made compu-

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[9] See chapter IV for the definition and social effects of a high dependency ratio. Also sed "age distribution" in chapter I.

[10] Reference to Kuznets' work was made by Gayle D. Ness, 'Population Growth and Economic Development', Journal of Tropical Geography, pp. 116-125.

tations on correlation in terms of rank order[11] between the rates of population growth and rates of growth in total product for the two groups. 0.705 was derived as the answer for the first group and 0.625 for the second. This, therefore, shows the existence of a close association between population growth and increase in national product.[12] In other words, if productivity per worker increases, then the more rapidly workers are added the more rapidly will total product expand.

Another point of importance is that the obstacle theory holds true by definition. For if total product is constant, then a bigger population would imply a smaller per capita product. An increase in both the population and total product would result in a smaller per capita product than if population remained constant and total product increased. But this is true only in terms of static analysis. As such, the controversy arising over the stimulant and the obstacle hypotheses can only be solved by reference to a dynamic model. Such a dynamic study was undertaken by Kuznets who found the existence of a strong correlation between the two variables under study. His findings are given in Tables 3.2(a) and 3.2(b).

The correlation coefficients in the tables were computed by using population growth data of ten years prior to the occurence of economic development. The aim was to give recognition to the fact that population growth involves many different types of costs to an economy not all of which would be felt immediately. For example, to take account of the increasing cost of education - ten years were used; and twenty years were used to illuminate the effect of an increase in population on the labour force.

The figures for India are most important in relation to this discussion for it, is an under-developed country just like Malaysia, facing many of the problems the latter does. A point of significance is that a positive correlation is derived in almost all cases, icluding India. This gives support to the stimulant hypothesis. However, the strength of the inference of positive association is diminished by nine weak coefficients (+0.39 and below). As such it may be argued that the tables give only qualified support to the stimulant hypothesis. However, neither does validity exist for using the above tables for either supporting or discrediting the obstacle theory because the tables include only industrialized countries with the exception of India. Moreover, the tables include countries with 1% to 2% average

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[11] The Spearman's Rank Correlation is given as $r = 1 - \frac{6\Sigma d^2}{n(n^2-1)}$ - see Frederick E. Croxton and Dudley J. Crowden; Applied General Statistics (2nd Edition, Prentice Hall of India), 1966.

[12] An answer of 1.0 indicates perfect correlation. Zero indicates that no correlation exists.

TABLE 3.2(a)

RANK ORDER CORRELATIONS (r') BETWEEN AVERAGE DECENNIAL RATES OF POPULATION GROWTH AND GROWTH OF G.N.P.

Country	Period	Decades	r_1'	r_{10}'	r_{20}'
Japan	1879-1942	8-12	-0.143	-0.130	+0.661(s)
India	1896-1960	5	+0.627	+0.556	-
U.S.A.	1870-1949	7	+0.429	+0.429	+0.429
U.K.	1856-1935	8-9	+0.466	+0.141	+0.315

TABLE 3.2(b)

Country	Period	Decades	r_1'	r_{10}'	r_{20}'
Japan:-					
including military expenditure	1890-1940	5	-0.100	+0.600	-0.550
excluding military expenditure	1910-1940	5	+0.300	+0.300	-0.400
U.S.A.	1870-1949	5(s)	+0.772(s)	+0.667(s)	+0.865(s)
U.K.	1860-1909	5	+0.375	+0.200	+0.550

Source: Gayle D. Ness, 'Population Growth and Economic Development', Journal of Tropical Geography.

Note: r_{10}', r_{20}' - include lagged correlations in which population growth ten and twenty years prior to product growth or per capita consumption were used.

s - indicates that hypotheses of positive correlation can be accepted at 5% level of significance.

annual rates of population growth whereas the obstacle hypothesis is more relevant to countries with between 3% to 4% increase in population.

The safest inference from the data, therefore, is that no effective relationship between rates of population growth and rates of economic development or capital formation exists. Moreover, the impression gained from countries like India hardly seems indicative that population growth, however rapid, is a very significant determinant of economic growth in the sense of increased population reducing national product, for in product this case the most rapid gains in total product coincide with the periods of most rapid gain in population.

3.4 A Factual Evaluation

So far, a theoretical analysis relating population growth and economic development in Malaysia has been undertaken. It would be valuable also to analyse in factual terms the actual impact population growth has on the economic development of Malaysia. One manner of doing this is to question the different effects that various population growth rates would have upon the pattern of allocation of public outlays. A higher growth rate would affect the emphasis in the distribution of these outlays between that expenditure which would have immediate growth effects and that expenditure where growth effects are relatively small (e.g. defence and welfare). The effects on foreign exchange earned from abroad will also be examined.

Housing is among the largest categories of social welfare investments with high capital output ratios. Therefore, the proportion going into such investments obviously exerts a major influence on the level of ICOR for the whole economy.[13] But one important feature of such investments and those on certain other forms of "social overhead" investment is that it can be postponed or cut without adverse effects on the growth of national output. But then a reduction in expenditure on housing and say the education and welfare needs of the people in the absence of any checks on population growth would only add long run difficulties of an illiterate labour force, of low morale, and of generally low productivity. As such, a reduction in population expansion is necessary and this would save valuable funds. For example, a halving of the fertility rate between 1960 and 1965 could possibly have saved about $400 million from housing for other more profitable investment.

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[13] Between 1960 and 1965, for example, a total of $850 million was invested in housing by both the public and private sectors.

Foreign exchange receipts, too, would be differently affected by variations in fertility rate. Malaysia obtains foreign currency and claims through a variety of transactions, the principal means being commodity exports, tourist expenditure by foreigners, and foreign loans.[14] Receipts from exports will be affected significantly by the fertility trend, first because the output of exportables would be different if fertility trends differed, and, secondly because different tendencies would arise for the domestic consumption of exportables. Exports would be less in higher fertility rates. With reduced fertility the output of exportables would be enlarged because the total supply of developmental capital would be larger and because the share that could be devoted to export industries would also be large. One reason for the increased total supply of capital is that more savings would be available. The reason for the larger share of capital available for export industries is that capital which would otherwise be channeled towards the production of consumer goods would instead be used for the increased output of exportables. In this way, foreign exchange earnings would increase. Foreign loans and investments may be affected, too, especially if these are attracted by a rising national income, for the more rapid growth of the latter associated with a lower fertility would attract a large volume of funds from abroad.

An analysis in historical terms shows clearly the relationship that has existed between population growth and economic development in Malaysia. For example, almost all the Chinese immigrants to the East Malaysian territories were the southerners, the Hakkas and Foochows being the largest group. In general, the Hakkas and Foochows were mainly agriculturalists, and the other sects, for example the Cantonese were traders, artisans, and labourers. Since the pattern of development in East Malaysia has been influenced considerably by the Chinese, it would not be an exaggeration to say that if the immigrants had comprised more Foochows and less Cantonese, for instance, then a wider agricultural development and a smaller concentration in towns would have occurred.

Moreover, in the early nineteenth century there was an urgent need for immigrants in Sabah. The Governor-General in his address to the Advisory Council in 1947 said that an urgent solution had to be found for the shortage of labour. The same point of view was held by the North Borneo Rubber Commission of 1949. The Chinese, however, were reluctant to fill the vacancies in the estates so that in 1907, the first Javanese were brought in. Later, the Filipinos were employed on the timber camps. There is no doubt that the economic progress of East Malaysia would have been vastly hindered had this immigration not taken place, but

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[14] Foreign borrowing in the First Malaysia Plan, for example, is set at $1,900 million and foreign grants at $900 million.

it is difficult to say to what degree development would have been affected. However, despite the frustrations in implementing the plans caused by the labour problem, the two East Malaysian states were in an exceptionally fortunate position because each state was able to concentrate its energy and resources on future economic growth without the distraction of an urgent need to provide for a rapid growing population as it is at present or will be in the near future.

The same problem of labour shortage was encountered in West Malaysia, for example - Perak. The Malays were not interested in working on estates. The Perak annual report for 1889 explained that a Malay "absolutely refuses to hire himself out as a labourer on any terms that a planter would accept. The mines absorb the Chinese, who prefer failure there to steady work and wages on an estate, and the planter's only chance of a labour force on which he can rely depends on the natives of Southern India, whom he must import into the state on certain conditions for a term of months".[15] The general situation was summarised in the Federated Malay States Annual Report for 1896 which said, "the number of large estates now being opened in Malaya increases so rapidly that the scarcity of labour is likely to be increasingly felt. With the extension of planting operations the labour question has become one of such importance that if the government of the Malay states really meant to encourage planters, it was evident that something must be done to supply them with labour".

These quotations clearly show that immigration which helped to swell the labour force played a tremendous role in the economic development of Malaysia. This is because the tin and rubber industries which were mainly developed by immigrants, are the two most important foreign exchange earners. As such, if immigration had not taken place, the natural resources of the country would never have been exploited and progress would have remained stagnant. This clearly illustrates the relationship between population growth and economic development, for as mentioned in chapter one, immigration was mainly responsible for population growth prior to 1957.

3.5 Population Growth, Food Supply and Economic Development

The question also arises whether the population growth problem is mainly a food problem. In this respect it would be interesting to refer to the classical theory relating population growth and the supply of food generally associated with Malthus.

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[15] Quoted from the Straits Settlements Gazette, 1890, p. 1474 by R.N. Jackson in Immigrant Labour and the Development of Malaya 1786-1920 (Government Press, Federation of Malaya, 1961).

Malthus claimed that a population has the potential power to grow in a geometrical ratio whereas the growth of food took the form of an arithmetical ratio as illustrated in Table 3.3. A point of significance is that after the second period, population will always be short of food and that population growth would always tend to go ahead of food supplies and consequently poverty would be irremediable.

TABLE 3.3

ILLUSTRATING MALTHUS'S CONCEPT OF POPULATION GROWTH AND THE EXPANSION OF FOOD SUPPLY

Period	1	2	3	4	5	6	7	8
Population Growth	1	2	4	8	16	32	64	128
Growth of Food	1	2	3	4	5	6	7	8

But there is a snag in this argument when applied to Malaysia, and in fact to any country. This arises because if we accept that the ratio of growth in a population of human beings is geometrical, then, apriori, the potential growth in plants and meat supplying animals is also geometrical. This has great relevance in the short run because as long as there is room to plant crops and double crop and rear animals, their rate of increase depends on man's ingenuity.

As the population grows, more acres will be cultivated and more animals reared. For example, an integral part of the government's programe to modernize and increase agricultural productivity is the introduction of machines to farms. Together with high yielding and resistant seed and plant strains, more fertilizer, improved drainage and irrigation, and double-cropping, the introduction of machines is liable to increase agricultural productivity tremendously. Moreover, the establishment of the Pan Malayan Agricultural Machinery Sendirian Berhad in Batu Tiga will increase the domestic supply of agricultural machinery.[16] A boost to agricultural expansion has also been made by the introduction of various schemes in West Malaysia, such as Tanjong Karang (50,000 acres), Krian (62,000 acres), Trans Perak (35,000 acres), Muda

[16] For more details on this establishment see the Straits Times, article on "Rural Revolution", p. 14 - (The Straits Times Press, March 31, 1969).

Irrigation (260,000 acres) and Kemumbu Irrigation (47,000 acres).

The fact that all these efforts have paid off is shown by the comments of the recent ECAFE Meeting held in Singapore. According to the calculations, Malaysia will be self-sufficient in rice by 1971. In 1965, for example, Malaysian food imports amounted to $613 million. This had been reduced to $610 million in 1966 but increased again to $622 million in 1967.[17] This is dangerous for it means that affluent Malaysians have been rapidly eating into valuable foreign exchange reserves to the tune of about $600 million annually.

At present, Malaysia produces two-thirds of her rice requirements and imports about 330,000 tons annually worth $150 million. With the completion of the various schemes, padi harvest would amount to 654,000 tons. As such, Malaysia will be able to reduce her rice imports by nearly 270,000 tons of rice annually. This will save $134 million a year in foreign exchange. But these savings amount to less than one-quarter of the $600 million spent on food annually. As such, vigorous attempts should be made to encourage Malaysians to eat cheaper but more nutritious food. For example, Singapore has launched a campaign to encourage its citizens to make wheat flour their staple diet. This is because wheat flour is both cheaper and a more nutritious food. If this policy were carried out successfully in Malaysia, then it would be possible to export rice and import cheaper wheat flour. This would probably save the country more than $200 million in valuable foreign exchange - (based on the present price of wheat flour per kati being twenty cents and rice per kati at forty-six cents - retail prices).

In the long run, however, the lack of adequate space and resources is logically certain to impose a ceiling on rising consumption unless fertility is reduced. If fertility is not reduced, then the rapid rate of population increase will lower the availability of food per consumer, and ultimately cause a rise in death rates.

With regards to the relationship between economic development and agricultural output, there are five important ways in which the increase in production of the agricultural sector will contribute to the economic development of Malaysia. In other words, the relationship between economic development and an increase in agricultural output can be seen in five ways.

Firstly, economic development is usually accompanied by a large increase in the demand for agricultural products and hence failure to expand food supplies would hinder economic growth. The annual rate of increase in the demand for food can be derived

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[17] Ibid.

from the following equation:-[18]

$$D = P + ng$$

where:

D - rate of increase in demand
P - rate of population growth
ϵ - income elasticity of demand for Agricultural products.
n - per capita income growth rate

Modifying this equation to consider the increase in demand over a period of time (t) instead of an annual increase, we have[19]

$$D(t) = P(t) + n(t)\,\epsilon \text{ (assuming time as discrete)}$$

Taking the rate of population growth in Malaysia as 2.6% and the per capita income growth rates as 27% during the Perspective Plan Period (1965 to 1985),[20] and assuming the income elasticity of demand for food as being 0.6,[21] then the equation becomes:-

$$D(t) = 2.6 + (0.6 \times 2.7)$$
$$= 4.22\%$$

Hence a per capita income growth of 2.7% will lead to a rate of increase in the demand for foodstuffs amounting to 4.22%. Thus with current rates of population increase and a modest rise in per capita income, the rate of increase in demand for food poses a formidable problem. Domestic shortages of foodstuff could only be offset by imports or otherwise prices would rise. But this would involve a huge drain on foreign exchange resources as discussed earlier. Moreover, cheap, starchy staple foods e.g. cereals and roots provide the major portion of the total calorie intake in Malaysia,[22] so that there is little possibility for offsetting a rise in food prices by shifting from expensive to less costly food. This, therefore, stresses the severe penalties attached to the failure to achieve the required increase in agricultural output.

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[18] K. Ohkawa - "Economic Growth and Agriculture", Annals Hitotsubashi Academy, (October, 1956).

[19] This modification has been made by the author.

[20] See the First Malaysia Plan, p. 61.

[21] This is the estimate of the income elasticity of demand for food in most under-developed countries made by Gerald M. Meier, Leading Issues in Development Economics (Oxford University Press), 1962, p. 292.

[22] See Chapter IV, Table 4.3

Secondly, an expansion of agricultural experts is likely to be an important means of augmenting foreign exchange and hence encouraging economic growth. As noted earlier, more than $200 million would be gained by exporting rice.

The third manner in which the agricultural sector contributes to economic development is by supplying the manpower for the manufacturing and other expanding sectors of the economy. This would be possible with an increase in agricultural output per man, leaving surplus labour which could be productively used in other sectors. Unfortunately, in Malaysia there is already surplus labour on land leading to under-employment. This is due to the unskilled nature of this labour and also due to the inability of the industrial sector to provide employment.

Fourthly, the agricultural sector also makes an important contribution to capital formation. For example, Malaysia faces the problem of acquiring sufficient capital to finance the creation and expansion of the manufacturing industry, for overhead investment in transport and utilities etcetera. The requirements for these purposes are bound to outstrip the supply of available funds. Hence, the size of the agricultural sector in Malaysia, as a major existing industry indicates its importance as a source of capital for over-all economic development.

Finally, an increase in the rural net cash would provide a stimulus to industrialization. The present shortcoming is that there is no large domestic market for manufactured goods due to the poverty of rural dwellers who comprise the major proportion of the total population. Thus, if this lack of purchasing power is remedied by increasing agricultural output, the local demand for industrial output would consequently increase.

3.6. Conclusion

In conclusion, it must be emphasised that although only the relationship between population growth and economic development has been discussed, other factors, besides population, are just as important in influencing economic progress. The very important variable of political independence and security must also be injected into any exhaustive discussion of the relationship between the two variables. Other important determinants include wisdom of government policies; the international climate - its conduciveness or its depressive effect on the Malaysian economy, for example the rubber and tin prices which are determined abroad; the volume of savings and investment; the consumption habits of the populace - the more that is allotted to consumer goods and luxuries, the less will be available for investment; and the skills, capabilities and the size of the labour force.

The above are only some of the determining factors. A variety of other factors, for example the necessity of favourable

weather for the agricultural sector, too, have important roles in moulding the economic future of the country.

However, the aim in this chapter has been solely to show the relationship between population growth and economic development and as such a detailed discussion of the other intervening factors has been omitted.

In conclusion, too, it can be said that whilst before the 1950's population increase (due to immigration) was tremendously important in stimulating economic growth, this population increase has now become an obstacle to economic progress and must be checked.

CHAPTER IV

POPULATION GROWTH AND THE STANDARD OF LIVING

4.1 Introduction

Technical definitions apart, a standard of living can be simply defined as the level of consumption of the basic requirements of civilised human existence in terms of food, clothing, housing, educational opportunities, health facilities, leisure and certain cultural amenities. In other words, it refers to the degree of poverty, comfort, opulence and the physical and mental health which a family, social group or country is experiencing.

In Malaysia today it seems natural to assume that the increase in the population due to a falling death rate and increasing birth rate is a symptom of economic development as well as the physical health in the nation. Health facilities have been expanded with the establishment of new hospitals and the renovation of old; the building of new clinics and the recruitment of doctors from foreign countries such as the Philippines. Population growth may be regarded as a symptom of economic development due to the belief that people live longer because they are assured of a more ample food supply and because they can afford better sanitary and housing facilities.

However, the relationship mentioned above between the trend of mortality and economic development does not hold in Malaysia nor in the other relatively under-developed countries today. This is because science has shown that the death rate of the impoverished people in the rural areas of Malaysia can be reduced rapidly without any change in the material conditions of living. For example, extraordinary results have been achieved by the employment of such means as mass inoculation against disease such as tetanus and diptheria - a campaign recently undertaken in all schools in the Petaling Jaya vicinity; the spraying of DDT to control malarial mosquitoes and infection - spreading flies with the help of the World Health Organisation - the aim being to eliminate malaria from Malaysia; and inexpensive improvements in sanitation and the protection of water supplies.

Through these measures Malaysia has succeeded in reducing the death rate considerably. But effective conditions for reducing fertility have yet to take effect. Therefore, the fact that life expectancy has lengthened and that fewer children are dying in

infancy does not mean that the population is now better fed, clothed and housed than before. That is, it does not imply that the standard of living has risen. If the population continues its present growth rate, then the standard of living is in fact threatened.

4.2 Population Growth and the Standard of Living

The threat of the high population growth rate to the standard of living in Malaysia is illustrated by the per capita income of the people which is one of the best indicators of the material conditions of living in any country.

The effect of different rates of population increase on the per capita income at constant prices, with 1965 as base year is shown in Table 4.1.

It is important to note that if the population continues growing at the rate of three percent per annum then the per capita income in 1985, ceteris paribus, will amount to $1,458 only, whereas if the growth rate is brought down to two percent by that same year, then the per capita income would be as high as $1,644 or 12.8% higher than $1,458. Moreover, at the lower growth rate of the two mentioned above, the per capita income 1985 would have increased by 77.6% over the original figure of $928 whereas an uncontrolled population growing at the rate of 3% would lead to a per capita increase of only 57.1%. If the growth rate is brought down to 2.2% by 1985, then per capita income would increase to $1,580 or by 70.3%. The effect of population growth on per capita income is best illustrated in diagram 4.1. The difference in the slope of the graphs showing the different population growth rates clearly enlightens the impact of different population sizes on the per capita income level.

The implication here is that the higher the growth of the per capita income level, the higher is the level of consumption and hence the higher the standard of living.

Population, in fact, enters into the problem of achieving a satisfactory standard of living in three principal ways in Malaysia. It is important to discuss each by turn.

Firstly, the higher fertility rate of more than 3% which is expected to be higher in East Malaysia as outlined in Chapter I, creates a heavy load of dependent children per adult, the latter roughly represented by the 15-59 age group. As such Malaysia has a high dependency ratio, that is, the number of productive workers to non-productive dependents. For each man aged between 15 and 59 years in 1957, there were in West Malaysia 3.6 other men, women and children. To quote from the report on the census of population:-

"..... draw attention to the fact that the number of males in the working age group is increasing at a much slower rate than the total number of males in the population, and that each

TABLE 4.1

IMPACT OF POPULATION GROWTH ON PER CAPITA INCOME

Year	Rate of Population Growth	(a) Population	(b) Per Capita Income	Rate of Population Growth	Population	Per Capita Income	Rate of Population Growth	Population	Per Capita Income
	%	1	$	%	2	$	%	3	$
1965	2.8	9,411,000	928	3.0	9,411,000	928	3.0	9,411,000	928
1970	2.5	10,800,000	991	2.7	10,900,000	982	3.0	10,900.00	982
1975	2.2	12,210,000	1,122	2.4	12,440,000	1,100	3.0	12,620,000	1,085
1980	2.0	13,600,000	1,324	2.2	13,980,000	1,280	3.0	14,620,000	1,231
1985		15,020,000	1,644		15,580,000	1,580		16,940,000	1,458

Source and Note: Gross National Income figures from which per capita incomes were derived are given in the First Malaysia Plan as $8,729 for 1965, $10,705 for 1970, $13,700 for 1975, $18,000 for 1980, $24,700 for 1985 - all in millions.

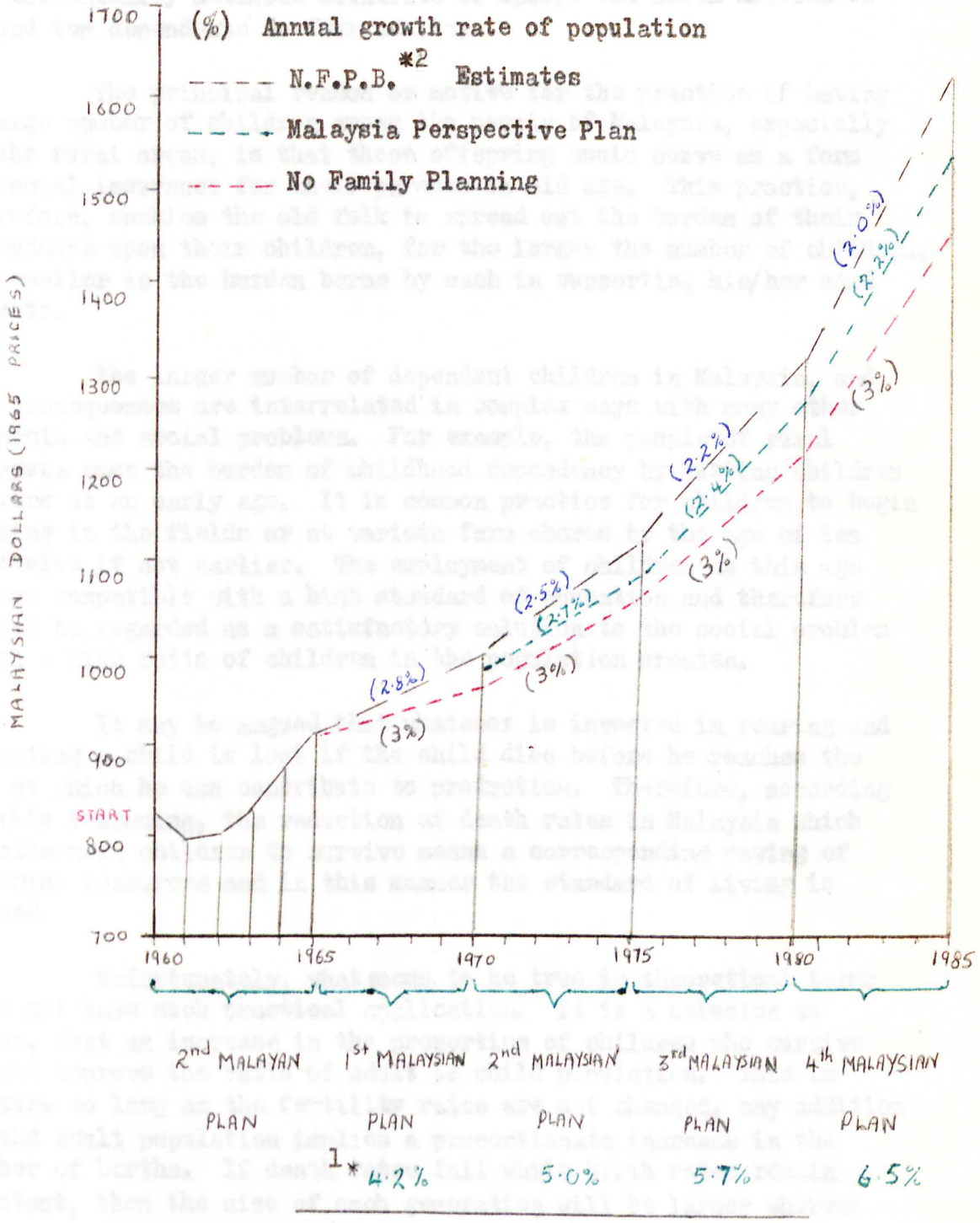
(a) Computed by means of compound rate formula.

(b) Calculated by using formula V/P where V - Total Gross National Income, P - Population.

DIAGRAM 4.1

M A L A Y S I A :

IMPACT OF POPULATION GROWTH ON PER CAPITA INCOME



*1 ANNUAL GROWTH RATE OF GROSS NATIONAL INCOME

*2 N.F.P.B. - National Family Planning Board

Source: Table 4.1.

male in employment today has more non-workers dependent upon him than in previous decades".[1]

In 1982, according to estimates prepared by the Department of Statistics for the 1963 Asian Population Conference, this dependency ratio will increase to 3.9. In other regions of Asia, and also Africa and Latin America, there are generally about seven children under fifteen to every ten persons between fifteen and sixty years of age. If other dependents are also considered, the dependency ratio becomes extremely high. In contrast, the ratio in the economically advanced countries of Europe and North America is around ten dependents to four adults.

The principal reason or motive for the practice of having a large number of children among the people of Malaysia, especially in the rural areas, is that these offspring would serve as a form of social insurance for their parents in old age. This practice, therefore, enables the old folk to spread out the burden of their dependence upon their children, for the larger the number of children, the smaller is the burden borne by each in supporting his/her aged parents.

The larger number of dependent children in Malaysia, and its consequences are interrelated in complex ways with many other economic and social problems. For example, the people of rural Malaysia ease the burden of childhood dependency by putting children to work at an early age. It is common practice for children to begin working in the fields or at various farm chores by the age of ten or twelve if not earlier. The employment of children at this age is not compatible with a high standard of education and therefore cannot be regarded as a satisfactory solution to the social problem which a high ratio of children in the population creates.

It may be argued that whatever is invested in rearing and educating a child is lost if the child dies before he reaches the age at which he can contribute to production. Therefore, according to this reasoning, the reduction of death rates in Malaysia which permits more children to survive means a corresponding saving of material resources and in this manner the standard of living is raised.

Unfortunately, what seems to be true in theoretical terms does not have much practical application. It is a delusion to argue, that an increase in the proportion of children who survive should improve the ratio of adult to child population. This is because so long as the fertility rates are not changed, any addition to thd adult population implies a proportionate increase in the number of births. If death rates fall while birth rates remain constant, then the size of each generation will be larger whereas

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[1] Fall, Op.cit, p.28.

the average number of children per adult remains unchanged. This argument applies not only to Malaysia, but also to other underdeveloped countries which will continue to suffer the social handicap of heavy childhood dependency so long as their present high birth rates continue.

The high dependency ratio also has other welfare implications. It contributes to a waste of energy, health, and most of all, human potential. Many mothers have too many children for optimum health and emotional well-being. Countless families have a larger number of children than they want, more than they can properly support and provide for.

Table 4.2 shows that more than 9,000 females reported having twelve children. The largest figure for this number of children was reported by the Malaysians with more than 5,000 women being enumerated as having twelve children. It was noted in Chapter I[2] that the Malaysians are found concentrated mainly in the rice growing states. Since most of these states, such as Perlis and Trengganu, are less urbanised than the others, one may conclude that the majority of the females reported as having twelve children are found in rural areas.

Another notable point is that there are more than 18,000 females with more than twelve children and those with more than fifteen children number 2,306.

Calculations of women old enough to have completed their child-bearing years show that one in twenty had eleven or more children born to them, one in eight had nine or more; one in four had seven or more and about 45% had five or more.

Many infants die before they reach the age of five. Moreover, many women accept the risk of abortion to avoid having children they do not want. There is no measure as to how many children a woman can have and still remain healthy but each pregnancy represents a heavy biological drain on the mother than a considerable amount of time is necessary for recovery. Numerous pregnancies following one another closely impose a heavy burden on the physical resources of a mother. This health cost is greater among rural women who are most likely to bear a child a year and who are usually under-nourished, anaemic and suffering from the ravages of malaria.

Abortion is illegal in Malaysia but a large number of pregnancies are terminated in this manner which recently raised a controversy in the press over the arguments for and against the legislation of abortion. Although no data as to how frequently

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[2]See Chapter I, Section 1.1.

TABLE 4.2

WEST MALAYSIA - NUMBER OF CHILDREN BORN TO WOMEN BY COMMUNITIES

Race	Number of Females to whom these number of Children were born							
	0-3	4-7	8-11	12	13	14	15 & over	Total 12 and over
All Races	1,316,052	412,178	142,643	9,717	4,339	2,105	2,306	18,467
Chinese	511,100	176,634	48,503	3,397	1,644	907	1,026	6,975
Malaysians	567,082	280,197	78,527	5,310	2,307	1,040	1,009	9,666
Indians	112,400	49,556	13,216	908	338	128	226	1,600

Source: Fell, Op.cit.

abortion occurs exists, the various hospitals receive a sufficient number of cases with regards the after-effects of abortion indicating that it is far more prevalent than is desirable. Criminal abortion frequently takes its toll not only of the child, but also of the mother who, besides the burden of an unwanted pregnancy is harassed by a young family, poverty, and lack of assistance and finance. All this misery and suffering arises because of the fact that the per capita income, an indicator of the standard of living, obscures the fact that an uneven of distribution of income exists so that the poor are encouraged to have more children which increases the burden of dependency on population pressure and hence deteriorates the material, mental and physical requirements of livelihood.

The second way in which the growth of population is related to the standard of living is that as a result of the rapid increase in population, large investments must be made to keep the growing numbers of workers equipped even with the same inadequate amounts of working equipment per man as they have had in the past.

Assuming a model country with a constant population, it is necessary only to replace depreciated or obsolete equipment in order to provide succeeding generations just as well stocked with tools as the previous ones. But in Malaysia where the population is increasing rapidly, an additional investment is required to maintain the same average amount of equipment per worker. Thus an adequate amount and an improved quality of equipment which would permit a larger average product per worker and a higher standard of living is difficult to attain. Moreover, if a population is growing fast, as it is in Malaysia, rather than slow, as in Ireland (0.3% between 1951 and 1965), it means that the portion of the income which the former can actually afford to spare from its annual income is smaller than the portion the latter can.

It is due to the above-mentioned factors that productivity and hence the standard of living in the rural areas of Malaysia has not been, and cannot be adequately raised. For example, although Malaysia is heavily dependent on agriculture, it is not self-sufficient in food production so that more than a quarter of the total value of imports is spent on food (see Chapter III). The problem in this country is not hunger or starvation but malnutrition which is most prevalent in rural areas. In this connection, it is interesting to examine the food consumption pattern in the countries given in Table 4.3

It is noteworthy that most of the calorie consumption in under-developed countries comes from cereal products and starchy foods whereas in the advanced countries, Australia and New Zealand, fats and oils, meat, fish, eggs, milk and cheese are more important. The important fact is that the advanced countries consume more nutritious food relative to the under-developed ones. Moreover, the average calorie consumption in the under-developed countries amounts to only about 2,000 whilst in the advanced countries the

TABLE 4.3

SELECTED COUNTRIES FOOD CONSUMPTION PER PERSON PER DAY (AVERAGE 1959-1961)

	Malaysia (Malaya)	Burma	Philippines	Australia	New Zealand
CALORIES PER DAY					
Cereal Products	1,443	1,520	1,229	899	820
Starchy Crops	106	112	157	80	111
Sugar	279	91	137	419	513
Pulses	127	112	109	40	42
Other Fruits and Vegetables	81	78	116	155	149
Fats and oils	167	123	98	449	528
Meat, fish, eggs	127	85	127	813	782
Milk, cheese	74	45	25	352	510
Total	2,400	2,170	2,000	3,210	3,460
PROTEINS PER DAY (GRAMMES)					
Animal	14.0	8.8	10.7	66.8	76.3
Pulse	5.6	4.5	3.7	1.3	1.3
Other	34.1	32.9	30.2	31.7	30.2
Total	53.7	46.2	44.6	99.8	107.8
Fats per day	41.6	33.3	32.0	142.5	159.2

Source: Foreign Regional Analysis Division Economic Research Service, U.S. Department of Agriculture, Food Balances for twelve countries in the Far East and Oceania, 1959-1961, p. 2

Note: The table above only gives selected countries from the original source.

figure is more than 3,000 per day. Another important point is that the consumption of body-building foods (proteins) in the underdeveloped countries amounts to about only half of the consumption in Australia and New Zealand. The table also reveals that Malaysia (Malaya) has the highest consumption level of proteins, calories and fats among the 3 underdeveloped countries given in the table. This data, however, is misleading for it only gives the average consumption level and hence obscures the low level of consumption among the poorer classes concentrated mainly in the rural areas.

The third manner in which population affects the standard of living is through excessive density of the agricultural population in relation to the cultivated land area in Malaysia (no accurate statistics are available for the land area under cultivation, but the 1957 census report places it as 5.4 million acres out of 32.4 million acres or 17% of the total land area in West Malaysia. Present information[3] indicates that in 1966 about 8.8 million acres was alienated for agriculture out of which 6.8 million was being cultivated). For example, cases have been noted where a farmer owns only one coconut tree or about three square feet of land which is the area occupied by an average coconut plant. This is partly due to sociological and institutional factors, for example, the fragmentation and division of a deceased person's holdings among his various children. Such conditions are also prevalent in other countries such as the Nile Valley and the densely populated islands of Java and Haiti where large farming populations are trying to make a living on a limited area of cultivable land. Two-thirds, or about twenty million of Egypt's population is concentrated in the narrow Nile Valley where the density is 1,600 persons per square mile.

Excessive population on a certain area of cultivated land is an obstacle to the attainment of an adequate standard of living. West Malaysia, especially, does not have vast arable land resources, for more than 50% of the area is mountainous and unsuitable for agriculture, and about 10% consists of swamps. It has been estimated that about 350 square miles should be opened annually to meet the demands of a growing population.[4] However, even if this is done, land which is sufficiently suitable will run out in fifteen years of expansion. As such the population continues and will continue concentrating on the limited land available.

Another problem is that the relative abundance of labour due to excessive population encourages labour intensive methods

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[3] Hugh Mabbet - "At a Glance - Facts on Farming and Forestry" - (The Straits Times Press, 14th March, 1969).

[4] T.H. Silcock, Economic Potential of Malaya, Readings in Malayan Economics (Singapore), 1961.

of cultivation which require a large labour effort for small returns because it would be uneconomical to utilize even simple machinery which would yield the same output for less labour input. Moreover, the small size of the over-fragmented farms limits the application of techniques which would only yield results if applied on a large scale. As such, underemployment is widespread. It is also true that even though labour intensive methods are used in Malaysia, some workers find difficulty in maintaining themselves at work throughout the year resulting in seasonal unemployment. To make matters worse landlords and middlemen take a major portion of the farmer's output in the form of rents, profits and interest on loans. Since, due to excessive population, there are a large number of tenants and labourers and a minority of landlords and middlemen, the bargaining position of the former group is greatly weakened so that they get a smaller share of the output which lowers their consumption level and their living standards.

Population pressure and the shortage of land has other evils, too. It leads to over-cropping soil exhaustion and the utilization of unsuitable land for the production of crops. Farmers, in order to accomodate their large numbers, strip hillsides of their protective cover leading to exfoliation and denudation of the land which results in valuable soil being washed into the rivers and seas. The deforestation also affects transpiration reducing effective rainfall with dire consequences on crop yield. Much, of course could be accomplished by such simple improvements as composting, manuring and crop rotation in areas where these are not practised. Such steps as the planting of better varieties of crops, breeding better strains of livestock, the control of plant and animal diseases and the application of chemical fertilisers could be undertaken. Unfortunately, difficulties are encountered especially where the people are illiterate, superstitious, wedded to tradition and suspicious of new techniques. This forms an obstacle to any efforts aimed at raising the living standards of the rural folk.

It must also be remembered that the existence of unoccupied land does not necessarily mean that the problem of accomodating the increasing population does not exist. Much of the land in West Malaysia is hilly and marshy, as pointed out earlier. In East Malaysia much of the land either has a soil cover technically poor for cultivation, or is remote and inaccessible. To bring such land into cultivation requires much financial and technical resources much beyond the means of the poor farmers. Settlers, moreover, are discouraged by legal restrictions on migration if not by the cost of transporting themselves and their families and establishing new homes. This is particularly true of West Malaysians desiring to enter and settle in East Malaysia. Moreover, many of the migrants who had settled in East Malaysia have now returned to their previous homes due to poor climate, hazards to health and an unsavoury social climate.

Thus in the three ways outlined above, the growth of population will seriously hamper the rise in the standard of living and will retard the physical and mental well being of the people. As such, it is of the utmost importance that concrete steps be undertaken to break the spiralling population figures.

4.3 Conclusion

It should be noted that the standard of living is only one of several social factors that the increase in population affects. However, no discussion on these other factors, such as education and housing, has been undertaken because the aim here has been to relate population increase and the standard of living only.

CHAPTER V

POPULATION POLICIES

5.1 Introduction

The disabling effects of a rapid population increase on the economic development of the country as noted in Chapter III, and the damaging effects of such a population increased on the mental, physical[1] and social well-being of the people, as discussed in Chapter IV, lead to the conclusion that unless the population menace is checked either by epidemics, natural catastrophes or modern science, the future seems bleak.

An attempt, therefore, will be made in this chapter to discuss the various possible measures of population limitation that may be undertaken, such as industrialization, emigration and urbanization and their limitations, the efforts made by the National Family Planning Board, and the shortcomings of the measures undertaken so far. An analysis of returns to a population control programme will also be attempted.

5.2 Urbanisation and the Population Problem

Urbanisation, as defined in Chapter I, is one means of reducing the population increase. For example, the 1960 enumerations of population in the East Malaysian states provide evidence that fertility is lower in urban than in rural areas as shown in Table 5.1. It shows that the average number of children per mother is smaller for the urban residents than the rural ones; the higher the age group, the greater the difference, a natural phenomenon since the older the women, the nearer are they to the completion of child bearing years and hence the greater the number of pregnancies they would have undergone. Since fertility is lower in urban areas, the urban women would have experienced fewer births so that the difference in the average number of children between older urban and rural women would naturally be great.

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[1] Malnutrition which may result due to too large a population does have an effect on mental well-being, for according to one authority - "many experts are now convinced that malnutrition retards mental as well as physical development" - The Reader's Digest, September, 1968, p. 86; "The Great Famine that Wasn't" - article by Carl T. Rowan and David Mayne.

TABLE 5.1

EAST MALAYSIA - AVERAGE NUMBER OF CHILDREN BORN ALIVE PER WOMAN, MALAY AND CHINESE, IN SELECTED AGE GROUPS (URBAN AND RURAL) 1960

SELECTED AGE GROUP	SARAWAK				SABAH	
	MALAY		CHINESE		All Communities	
	Rural	Urban	Rural	Urban	Rural	Urban
15-44	2.5	2.8	2.5	3.0	2.5	3.0
25-29	2.8	3.0	2.5	3.2	2.6	3.4
40-44	4.6	5.4	5.6	6.5	5.1	6.3
45-49	4.4	5.6	5.3	6.2	4.9	5.8
45 and over	4.3	5.4	4.5	5.1	4.4	5.3

Source: Adapted from Jones, The Population of Borneo.

The phenomenon of lower urban fertility is not peculiar only to Malaysia. The decline in fertility has been preceded and accompanied in all countries by a major shift of the population from the country to the city so that it has been suggested that there is a close correlation between the rapid increase of the proportion of the population living in urban areas (corresponding to a decline of those living in the countryside) and the decline in fertility. This contention is supported by the existence of larger families among rural rather than urban areas.

Unfortunately, the precedent of other countries does not necessarily apply to Malaysia. That is, a reduced urban fertility would probably not imply a lower rate of population growth immediately because, firstly, the urbanised population of Malaya is small, amounting to only 27% in West Malaysia in 1957. Secondly, the fewer children born in urban areas may be compensated for and surpassed by improved survivorship, especially in East Malaysia where a greater progress is made in the acceptance of modern medical remedies and the establishment of new medical centres. Furthermore, it is ridiculous to encourage widescale urbanization for the sole purpose of reducing fertility as this would give rise to tremendous social and other problems such as housing shortage, unemployment and other related difficulties. Furthermore, it is unlikely that any crisis on the scale of the emergency would occur, this encouraging greater agglomerations of people. Of course, with the recent terrorist activity on the Thai-Malaysian border, and the creation

of New Villages on the Malaysian side of the boundary, it is likely that the birth rate in that particular area might follow a downward trend in the next few years.

In conclusion, it would be best to let urbanisation take its course without giving it unnecessary encouragement just for the purpose of reducing fertility. It would not be worth accruing the costs arising from a huge urbanization scheme, for this would only retard economic development due to wastage of funds. As such, the urbanization plan would in fact be self-destructive in nature.

5.3 Emigration and the Population Problem

Emigration played a vital role in European countries during the nineteenth and early twentieth centuries in helping them ease their economic and social problems which would inevitably have arisen had their rapidly growing population found no outlet from their countries of origin. According to one estimate,[2] the European population would have been 88 million more by 1910 had no emigration taken place after 1800. The Irish population, for example, had decreased from 8 million in 1841 to three million in 1946.

The situation in Malaysia, however, is different. This country has been subject to immigration which only stopped playing an important role in population growth in the late 1950's. As such, emigration as a solution to the population problem can be ruled out. In fact all the densely populated underdeveloped countries have little opportunity to ease their population problem through emigration, as, say, Britain, China and India did. Emigration not only provided a relief from population pressure for these three countries, but the emigrants also built up markets abroad for the products of the home country. The Indians and the Chinese populations in Malaysia, for example, constitute a strong, constant source of demand for the products of their countries of origin.

There are also other obstacles preventing Malaysia from easing her population problem through emigration. There are no "new worlds" to be discovered. Emigration to still vastly unpopulated countries such as Australia is hampered by political restrictions. Severe restraints both on the right of immigrants to enter and on the type of employment they can engage within the country make it difficult for the nationals of under-developed countries, particularly Asians who are considering emigration. Such countries, moreover, prefer to encourage settlers from more wealthy countries who can bring more capital, a more superior education and a better knowledge of modern techniques. But migrants from Malaysia and

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[2] The Determinants and Consequences of Population Trends, Department of Social Affairs, Population Division, United Nations, 1964.

other under-developed countries, for the most part, are not qualified for any but a fairly narrow range of relatively unskilled jobs outside of agriculture. As such, they find difficulty not only in competing with resident workers in the countries of immigration but also with migrants from more developed countries.

Due to reasons mentioned so far, emigration as a solution to the population problem in Malaysia can be ruled out. It is almost inevitable that the shifting balance of births and deaths will be the major determinant of population trend.

5.4 Industrialization and the Population Problem

Industrialization, according to Arthur Lewis,[3] is a process whereby a country is transformed from an 85% to a 15% agricultural one. Although the dependence on agriculture is reduced, its productivity has to be raised tremendously to feed both the 15% agricultural and the 85% non-agricultural population. The argument for industrialization as a solution to population pressure lies in the fact that the problem is one of excessive population in relation to available resources such as agricultural land. It is argued, therefore, that industrialization will relieve the pressure of population upon land through the transfer of labour from agriculture into other fields of employment which the 85% industrialized economy will now be able to provide; for 81% of the females and 74% of the males in Sarawak, and 81% of the males and 77% of the females in Sabah are employed in agriculture. Consequently, industrialization would lead to an indirect exchange between labour, which is plentiful and land which is scarce, for industrialization would lead to the production of manufactured goods which could be traded abroad for food and other requirements.

It is possible that given a favourable political and economic climate in the future, industrialization in Malaysia may turn the growth of population into a valuable aid in attaining a higher standard of living. It cannot be denied that industrialization has played an important role in the development of highly industrialized countries such as the United States where a high fertility rate, a falling death rate, and immigration increased the population from a mere five million in 1800 to more than 199 million in 1960. If the population had remained at the 1800 level of 5 million, there would not have been available the necessary skilled labour force to exploit the country's vast natural resources. As such, it may be argued that industrialization would lead not only to a decline in fertility, but would also enable the productive employment of the labour force.

The above argument, however, is a drastic over-implification of the problem. No doubt industrialization has made some

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[3] W. Arthur Lewis - Principles of Economic Planning (1965 Edition, Unwin University Books).

headway in Malaysia, but industrialization on a scale necessary to solve the population problem is beyond our means. It is a formidable task to develop large scale industries in a predominantly agricultural country like Malaya with a low level of income. Other hinderances also exist. There is a scarcity of workers with the necessary skills and technical knowledge for the efficient cooperation and maintenance of sophisticated machinery. The formation of an efficient labour force depends both on the willingness and aptitudes of the people and their desire to learn and perform technical tasks. The Malaysian education system, unfortunately, is more orientated towards the production of white-collar wage earners. The efforts being made to encourage the acquirement of modern technical and other scientific skills are grossly inadequate. Moreover, the learning of new skills followed by a change of occupation often means a complete readjustment of the workers way of life so that financial benefits of new employment are not always sufficient to attract a large number of workers.

Other obstacles also exist. If Malaysia wishes to sell industrial goods abroad, she must produce them efficiently and cheaply in order to compete with more advanced nations possessing a highly developed industrial plant, a skilled and efficient labour force and an established position in world markets. On the other hand, if Malaysia wishes to industrialize by producing for the home market, she is handicapped by its limited size which has further been reduced by the separation of Singapore.

Nevertheless, although industrialization is difficult and requires gigantic efforts and sacrifices, it seems to be one important means of overcoming the growing threat of hunger, destitution and disease. Population policy can enter into the picture as an auxillary to industrialization, that is, drawing up a plan of industrialization in such a way that those forces which lead to a decline in fertility are obtained as a by-product. Female education, commercial recreation and female employment are some of the factors which are known to alter the traditional cultural values and pave the way for new attitudes.

5.5 Population Policy in Malaysia

The oldest means of population control practised in Malaysia, especially among the lesser native tribes, were infanticide and crude abortion. Both, due to their inhumane nature, have been barred in the country. On the other hand, the concept of family planning in the sense of a deliberate attempt on the part of married couples to space the births of their children and to plan the size of their families in accordance with social, economic and health conditions has only recently come to Malaysia. This country is also the most recent among Asian nations to officially recognize the need for population planning and the need for the government's participation in the implementation of the programme. As a result, a family planning programme was launched in 1964 to

undertake measures aimed at reducing population growth. In June 1966, the Family Planning Act became national law with the establishment of the National Family Planning Board of Malaysia (N.F.P.B.) as an inter-ministerial autonomous body.

The National Family Planning Board has drawn up an ambitious programme for itself. According to certain sections of the Family Planning Act, some of the functions and duties of the Board are - the formation and promotion of policies and methods aimed at the expansion of family planning knowledge; the coordination of family planning activities in the country; conducting research on matters relating to family planning; and the establishment of a system of evaluation which would enable an assessment of the accomplishments to date.

The Board, well aware that the high rate of population increase is posing serious economic and social problems to the nation, aims to reduce gradually the rate of increase to 2% by 1985 as outlined earlier.[4] The Board has also set a target of more than 400,000 contraceptive acceptors (mainly oral pill users) by 1971 programmed through four stages as given in Table 5.2

The programme begins in stage I from large metropolitan areas where medical facilities are conveniently available, expanded to rural towns in stage II, and then extended to rural areas in stages III and IV. It is notable that the Board's aim is given less prominence. This is because by the time the women reach the latter age group, they have normally completed their child-bearing years.

It must be realized that the National Family Planning Board is not the only body responsible for what has been achieved so far. State Family Planning Associations, private and government doctors and rubber estates have also made an important contribution.

Some interesting observations can be made from data produced by the Board. Of the various contraceptive methods used, the most popular is the pill. For example, in 1968, 92.6% were pill-users as shown in the figures below. Other measures such as the intra-uterine device (I.U.D.) and sterilization seem less popular.

	Oral Pills	I.U.D.	Sterilization	Other	Total
1967	89.9%	2.5%	3.4%	3.9%	100%
1968	92.6%	1.6%	3.5%	2.3%	100%

[4] Section 1.2, Chapter I.

TABLE 5.2

THE NATIONAL FAMILY PLANNING BOARD
POPULATION PROGRAMME

Year	Stage	Target Proportion of married child bearing age women as acceptors	Target Population Age Group		
			15-44	45-49	15-49
		%			
1967	I	3	29,000	2,500	31,500
1968	II	5	49,000	5,100	54,100
1969	III	8	82,100	7,000	89,100
1970	IV	10	105,700	9,100	114,800
1971			108,900	9,300	118,200
Total		36	375,500	32,200	407,700

Source: Adapted from - Monthly Progress Report, Malaysian National Family Board programme, December, 1968.

Another interesting point is that in contradiction to the common belief that the educated are more responsive to population control measures, data from the annual report of the Board shows that more women from lower educational level groups are taking advantage of the Board's programme. As tabulated below, 54.8% of the acceptors in the last two months of 1967 had either no schooling or only primary education. The smallest percentage figure is found among those with either upper secondary, or college or University education - which account for 1.5%. One explanation is that there are fewer women in the higher education levels relative to the total female population.

	No Schooling	Primary	Secondary	Upper Secondary	College, University
Number	2,029	1,886	1,302	90	16
Percentage	28.4	26.4	18.3	1.3	0.2

An evaluation of the Board's achievements would be appropriate at this juncture. Metropolitan centres of family planning have been opened at Alor Star, Penang, Ipoh, Kuala Lumpur, Seremban and Malacca in 'partial' fulfilment of stage I. These centres are attached to general hospitals. Clinics at Bukit Merah New Village, Perak were established as part of the second stage. Pilot projects for rural areas, namely for the four rural health centres in Rembau, Jitra, Bachok and Parit Java have not been set up due to shortage of staff. At present, the Board has 57 main family planning clinics in full time operation throughout the country and about 160 satellite clinics under the 57 main clinics operating about once a week.

The target figures for acceptors for the various stages have already been noted. Table 5.3 gives the target and the achievement figure for 1967. It is heartening that more than 90% of the target has been achieved. However, it must be realised that an annual "deficit" of 10% would accumulate to a considerable figure short of the target over the years. Moreover, the 90% figure cannot be taken at its face value. It need not necessarily imply that all the acceptors will continue practising family limitation methods. Table 5.4 shows that a large percentage, more than 38% of the acceptors want to have children later. And since the question of having or not having a child depends on environmental factors finance, health, etc., it is possible that a considerable number of the "no never" and the "may be" category would in fact come under the "yes later" category. If these considerations together with the 10% shortcoming in the target are taken into account, then it is possible that the programme of the NFPB would be unsuccessful. The shortage of staff which prevented the implementation of certain schemes mentioned earlier would also vastly hinder the population control programme. As such, the NFPB pro-

TABLE 5.3

WEST MALAYSIA - FAMILY PLANNING ACCEPTOR TARGET AND ACHIEVEMENT (MAY-DEC., 1967)

Population June, 1967	Established number of child-bearing woman 15-49	Annual Target	Target (May-Dec, 1967)	Number of acceptors (May-Dec, 1967)	Achievement %
8,541,720	1,255,633	39,340	22,946	20,726	90.3

Source: Adapted from Malaysian National Family Planning Programme, Op.cit.

TABLE 5.4

WEST MALAYSIA NUMBER AND PERCENTAGE OF 1967 ACCEPTORS WHO WANT ANOTHER CHILD

	Yes, Later	No Never	May be	Total
Total	7,942	11,085	1,699	20,726
Percentage	38.3	53.5	8.2	100.00

Source: Ibid

gramme would be a dismal flop. This conclusion is given greater support by the results of a study on the use of the I.U.D. and the infectable contraception in Tanjong Karang and Sungei Besar which revealed that only 30% of all I.U.D. cases inserted between February and December 1968 were still continuing.

The defects do not end here. In fact that whole population policy in Malaysia is at fault. For example, there is frequent mention in the First Malaysia Plan of the problems posed by the population increase. Unfortunately there is no indication in the plan that this problem is one requiring planned action just as matters regarding education and manpower which are given prominence. Considerable and careful attention and effort is devoted to assuring

increase in economic development, but no comparable effort to slow the rate of population increase is forwarded, as is done in India, where the population control programme is incorporated into the development plans. Moreover, although the population of East Malaysia constitutes a considerable proportion of the total Malaysian population, yet no concrete plan has been implemented in these two states except for efforts made by the Family Planning Association in Kuching.

It would be pertinent, also to discuss why, despite the realization by married couples of the desirability of having less children, little effort is made to minimize family size. That is, what are the factors standing in the way of family limitation in Malaysia? These factors may be divided into several categories, namely familial, personal, attitudinal, communication, organisational and economic factors.

Among the familial factors are high marriage rates - almost all mature women are married; early marriage - which leaves a whole lifetime of reproductive years available for child-bearing; the status of women which leaves few alternatives to the domestic role confining them to the care of home and children. Other familial factors include a desire for children especially sons (to support parents in old age) or status - many sons implying a manly father.

Personal factors include lack of privacy for parents especially in rural areas where homes consist of only one room shared by all members of the family. This lack of privacy implies that facilities for sanitation and storage of contraceptive supplies are not present. Moreover, among all the three main communities in Malaya, there may be little conversation over the subject of family limitation due to its personal nature so that no opportunity is available for the development of necessary social rapport and support.

Attitudinal factors refer to religious, moral, political or ideological objections to fertility control. This often applies to particular contraceptive methods. For example, all methods except the rythmn method are prohibited to Catholics. Peasant inertia, apathy and resistance to change are also contributory factors.

Among communication factors are ignorance of purpose, means and consequences of family planning; and low literacy among women which handicaps informational programmes from the outset.

Organisational factors refer to the division of the population into many small villages complicating the problem of communication and supply.

Finally, economic factors include the lack of distribution facilities so that arrangements made are typically inadequate to cope with problems of distribution; and to have as many children

centre staff and rural health workers, are particularly effective in furthering a family limitation campaign.

5. Establish a Federal Population Commission with a large budget for propaganda. It should make clear the relationship between a rising population and lowering quality of life.

6. A variety of contraceptive devices should be made available so that each couple will choose that which is best suited to them. The supply of safe, low cost contraceptive materials should also be assured.

7. Change our tax laws so that they discourage and not encourage reproduction. We should eliminate all income tax deductions allowed for children and replace them with a graduated scale of increases. It should be made clear to the people that it is socially irresponsible to have large families.

8. Establish laws which make instruction in birth control methods mandatory in higher levels of education such as colleges and the university. Laws legalising abortion to those who voluntarily ask for it should be passed.

The above measures will take about 14-18 years to take effect when the cohort of women born now reach child bearing age. Should these steps fail, then the problem would have become critical enough to warrant a form of compulsory birth regulation. For example, a system may be instituted whereby a temporary sterilant would be added to, say, the water supply an antidote would then have to be taken to permit reproduction. It is possible that many refrain from practising existing methods due to a nonchalant attitude. This means that even the antidote to the sterilant is freely available, the same attitude will remain so that the result of such a programme would be an effective reduction in the birth rate. Steps could also be undertaken to make sterilization compulsory for couples with, say three children.

Costs and Benefits of Checking Population Growth

The public cost of the family planning programme has, so far, fortunately been met by generous grants and aid from the Swedish International Development Authority (SIDA), the Ford Foundation and the University of Michigan Population Programme. Other countries, Pakistan for example, have planned to spend about 30 cents (Malaysian) per capita (about $27 million) due to high rates of illiteracy and relatively poorly developed health services which make it compulsory to devote more resources to communication and education. These costs are moderate relative to public health or education.

The argument for the population programme can be presented in two ways. Firstly, one can compare the cost to public authorities of a genuine effort to control births with the reduction in public spending which the prevented births give rise to in fields like health, education and housing. Secondly, one may estimate the costs and total benefits resulting to society as a whole from a campaign designed to bring down the rate of population. The case for a population reduction programme has been put in a nutshell by Lyndon Johnson who said, "less than $5 invested in population control is worth a $100 invested in economic growth".[5]

5.6 The Economics of the Unborn

The discussion on this subject is centred mainly around the cost and value of a programme per "prevented birth". This cost is dependent on the efficiency of the programme on the one hand, and on the mix of overheads - clinic costs, costs of contraceptive devices and possibly solicitation costs. Of importance, however, is that distinction should be made between public costs and resource costs. If the public pays all or part of the costs for clinic services and contraceptive devices, then the cost to the public sector would be small. Although Malaysia receives contraceptive devices as aid from abroad, a certain amount is still collected from contraceptive users for supplies given. As such, the Board's budget of $1.59 million in 1968 was partially covered in this manner. It is not possible to give a precise answer to the question of how many dollars it takes to prevent one birth, but a general answer to the question will bd attempted by discussing the question with respect to the two most popular contraceptive devices.

With regards the intra-uterine method, it must be remembered that all that matters is not only to get the device inserted, but that a strong organisation is also necessary to handle complaints and provide reassurance. The device itself costs little, but the cost per I.U.D. insertion may lie between $3 to $15. If a large programme is undertaken, then the cost will possibly lie within the lower half of this range. The cost in other Asian countries, Taiwan and Korea, for example, is about M$9.60 and M$14.00 respectively. The general rule of the thumb is that five I.U.D.s used prevent 3 births in 3 years. Two of the women have the I.U.D. either expelled or removed; each of the remaining three would have had an average of one child in three years which is now prevented. As such, a cost of between $15 to $75 in five years prevents three births. In other words, each I.U.D. prevents 0.6 births.

Oral contraceptives (pills) are sold by the Board at a cost of $1 per month's supply or $12 per year (although they have

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[5] President Johnson's speech on the 20th Anniversary of the United Nations, 25th June, 1965.

cost nothing to the public sector because they have been obtained as aid part of which amounts to 0.75 million monthly cycles of oral contraceptives). The cost per prevented birth would hence amount to about $36.

The above estimates take no account of other costs such as overheads, publicity efforts and training. For example, the total expenditure from 1-6-1966 to 31-12-1966 came up to more than $132 thousand of which salaries amounting to $43.9 thousand made up the largest portion. One must also be cautious in making estimates or taking the budgets too seriously as the campaign has only recently begun. Moreover, expenditure must not only be matched against results but also against the extent to which educational efforts take effect and I.U.D.'s stay in place.

5.7 Government Savings

To demonstrate the advantages of the family planning programme, many estimates can be made of benefits accruing mainly to the public sector. Not all these relate to the cost of children. The public expenditure that really counts in this context is that made on education. In Malaya, where primary education is free, the unit cost to the public sector of a year's primary education was established at $147 for 1967. One must, however, consider that the school enrolment for those in the 0-12 age group who have undergone 1 to 6 years of education is extremely low relative to the total population in that age group, amounting to only 444,395 from a total of 2,071,680 in 1957. In 1967 the primary school population attained the high figure of 1.217 million as shown in Table 5.5. While it is recognised that the economic expenditure on education is essentially a long-term investment, the question is whether the nation will be able to afford to undertake educational development on the scale shown in the table. This is because the total recurrent expenditure is expected to amount to $423.6 million in 1985 on primary schools alone. Moreover, during the past few years public expenditure on all levels of education, less fees collected has been on average about 4.5% of the gross national income. This does not give an accurate picture of expenditure on education in relation to national income since there is a considerable amount of hidden expenditure not taken into account, adult education being an example. Hence one can argue in this situation that a new birth will add much to the unfilled demand for adequate education and so ought to be prevented.

Arguments relating to savings in public expenditure obviously have great political importance but the argument carried out so far is strained to breaking point. It is absurd to suggest that merely because it costs a lot to educate a child, each birth brings economic loss to the community. If one adds the cost to parents of rearing their children to the cost of educating them, it will add to sizeable amounts even among poor families. For example, it may be argued that the cost to parents of providing food per child (a minimum of, say $1 per day for 12 years) added to the cost of

TABLE 5.5

ANNUALLY RECURRENT EXPENDITURE OF PRIMARY SCHOOLS FOR THE YEARS 1965-1985 AT FIVE-YEAR INTERVALS

Year	Total Enrolment ('000)	Total Recurrent Expenditure	Percentage in expenditure increase
1965	1,217	178.9	19
1970	1,450	213.2	27
1975	1,667	270.1	26
1980	1,923	340.4	24
1985	2,218	423.6	

Source: Report on the Higher Education Planning Committee, Kuala Lumpur, Malaysia, 1967, p. 297.

Note : The unit cost used in the calculation of total recurrent cost is $147 for 1965 and 1970, $162 for 1975, $177 for 1980 and $191 for 1985

primary education (books etc) at, say, $100 per year for six years would come up to a staggering figure of more than $5,000 per annum - all of which would stand to be saved at the modest investment of a few dollars. If the parents earn, say about $3,000 to $4,000 per year, then the burden becomes impossible to bear.

The above illustrations show that the rearing of children is expensive; but it cannot follow, even if we take a narrow economic point of view, that it should be stopped altogether. It is a question of economics versus aesthetic values.

5.8 The Returns of Investment in Population Control Compared to Returns in Alternative Investment

It would be fruitful to discuss how much more rewarding it would be to increase the socio-economic development of the country by controlling population than by investing in, say dams and other traditional sources of investment. Enke[6] has shown that the

6. "Economic Aspects of slowing Population Growth," Economic Journal (March 1966, p. 46).

advantage of the former course of action is staggering. To quote:-

"An examination of the relative growth rates of output and population leads to the startling conclusion that resources used to retard population growth can contribute perhaps a hundred times more to higher incomes per head than resources used to accelerate output growth."

That is, the returns to population control are a hundred times the returns from traditional sources of investment. Enke's argument can be applied to Malaysia as follows:-

The ratio of output per head, V/P (V - output; P - population), can be increased by either investing in resources and hence making the numerator larger, or by reducing the population denominator to a smaller figure than it would otherwise be in 1985 by which time the NFPB hopes to reduce the rate of population increase to 2%.

The First Malaysia Plan gives a target investment figure of approximately $195.25 million worth of resources to be invested in industrial plants and other traditional sources of investment each year between 1965 to 1985 (20 years) aimed at increasing the gross national product. Assuming a rate of return on this investment as 10% a year, then the annual return on $3,905 million ($195.25 x 20) invested over a period of 20 years amounts to $390.5 million ($\triangle V$).[7] The 1965 gross national product figure was $8,729 million ($V$). This means that the proportionate change in the yearly national output ($\triangle V/V$) due to this investment of $3,905 million over 20 years is 0.04475.

Assuming now that instead of being invested in traditional projects; the annual expenditure of $195.25 million is now utilised for the purchase of contraceptive devices invested in a birth reduction programme. Assuming that the cost per participant is $20, then the $195.25 million would allow approximately 9.760 million participants per year during the 1965 to 1985 period.[8] Taking the

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[7] Detailed computations are given in Appendix V.

[8] It is of course impossible that the Malaysian Government would spend such a large amount on population control. Moreover, it is also impossible that more than 9 million people could be brought within the programme for the total Malaysian population today amounts to only about 10 million. The aim here, however, is to make a comparison between the two categories of investment and to show the superior effectiveness of investing in a birth control programme; and since the government has already planned investing $195.25 million annually in traditional investment, it would be important to note the impact the same expenditure would have on the nation if invested in a birth reduction campaign even though one on such a scale would not be undertaken.

birth fertility of a typical woman participant as 0.15 infants per year, the decrease in births ($\triangle P$) over 20 years is 1.464 million. The 1965 population (P) was 9.411 million. Thus the proportionate change in the national population ($\triangle P/P$) due to this investment is 0.1556.

If $195.2 million over 20 years gives a $\triangle P/P$ of 0.1556 when used to retard population growth, and a $\triangle V/V$ of 0.04475 when used to accelerate output growth, the superior effectiveness of birth reduction over output expansion ($V\triangle P/P\triangle V$) is 3.476 times.

The above answer is based on the exaggerated per participant expenditure of $20. If a more realistic expenditure of $3 per head is taken, then the same basis of calculation gives the superior effectiveness of birth reduction over output expansion in Malaysia as 32.05 times.

Enke derived his answer of the superior effectiveness as being 100 times by assuming an annual investment of $0.5 million over 10 years; an initial national output of $500 million; a rate of return on investment of 15% a year; a per participant cost of $1, a fertility rate of 0.15 infants per typical woman participant; and an initial national population of 5 million.

The ratio of superiority varies proportionally with assumed rates of fertility of woman practising contraception and inversely both with return to capital and with cost of programme per participant. This is illustrated in the table below:

TABLE 5.6

SUPERIOR EFFECTIVENESS RATIO
($V\triangle P/P\triangle V$) (SENIORITY TO f AND r)

r \ f	0.10	0.15	0.20	0.25
0.20	50	75	100	125
0.15	67	100	133	167
0.10	100	150	200	250

Source: Ibid.

Note : f - fertility

r - rate of return on investment

Given Enke's figures, if the rate of return on investment (r) is 0.20 and the fertility rate is 0.25 (f), then the superior investment is 125 times; if (r) is 0.10 and (f) is 0.25, then the superior effectiveness is 250 times and so on.

The discussion undertaken so far does not necessarily imply that conventional development investment should be terminated in favour of birth reduction programmes. This is because the latter would never usefully cost more than perhaps 1/25 of the former's budget.

5.9 Benefits of a Population Control Programme

One way of illustrating the benefits that may result from reducing the rate of population increase is to compare the income of a slow growing population with the income that the same population would enjoy if its per capita income had amounted to what it would have been in a faster growing one.

In Chapter IV (Table 4.1) it is shown that if the population increases at a constant compound rate of 3%, then by, say 1980 it would number 14,620 thousand and the per capita income would only be $1,231. But taking a lower growth rate of population whereby the rate of increased is reduced to 2.2% by 1980,[9] then the population would be only 13,600 thousand and the per capita income would be as high as $1,324.

Denoting in absolute figures the size of the population at time t on the assumption of the lower and higher fertility rates as $P_L(t)$ and $Ph(t)$ respectively, and the per capita incomes in these two cases as $Y_L(t)$ and $Yh(t)$, the benefits B(t) arising from the lower fertility rate can be found by substituting in the following formulas-[10]

$$B(t) = P_L(t) \left[Y_L(t) - Yh(t) \right]$$

- which, by substitution becomes

$$B(t) = 13,600,000 \ (1324 - 1231)$$

$$= \$1,264,800,000$$

This is the stream of future benefits the present value of which can be calculated at any discount rate.

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[9] See Table 4.4, Chapter IV, columns 1 and 3.

[10] Goran Ohlin, Opcit. p. 118

Alternatively, one may instead calculate the losses (Lt) accruing to the high fertility population in which the control programme is not adopted by using the following formula:-

$$L(t) = Ph(t) \left[\overline{YL}(t) - Yh(t) \right]$$

- which by substitution becomes

$$L(t) = 14,620,000 \ (\$1324 - \$1231)$$
$$= \$1,359,660,000$$

These computations reveal that although the difference between the per capita income in both the calculations is the same ($930); yet because the population is larger if a population policy is not adopted, the losses will be larger than the gains from implementing it. These calculations illustrate the critical importance of an effective population programme.

5.10 Conclusion

One of the implications of birth control policies discussed in this chapter is to raise the standard of living from below the subsistence level. However, those who do practice birth control soon orientate their thoughts towards the attainment of a standard of living for above the poverty level. For example, men with financial resources sufficient for the maintenance of 5 or 6 children comfortably, have only one or two with the aim of providing them with higher cultural and material endowments. This gives rise to a conflict between quantity and quality.

The question of quality becomes increasingly urgent as birth reduction policies achieve higher efficiency levels and become widespread. This is because the intellectuals and the social minded respond to sensible birth control policies to a greater degree than the ignorant, the reckless and the selfish who continue to procreate to the limit despite measures to limit these tendencies. This gives rise to a deterioration in a great many desirable social qualities including intelligence, so far as they are hereditary.

Unfortunately, this is one possibility Malaysia must risk in its aims to provide a higher standard of living for the masses and to prevent the population growth becoming a menacing obstacle to economic development.

APPENDIX I

MALAYSIAN POPULATION
STATISTICS

ESTIMATED POPULATION BY STATE, RACE AND SEX AS AT 31ST DEC., 1967 (ESTIMATED POPULATION AT MID 1967 + EXCESS OF BIRTHS OVER DEATHS + CHANGE OF IDENTITY CARDS)(1)

STATE	ALL RACES			MALAYS+			CHINESE			INDIANS + PAKISTANIS			OTHERS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Johore	681,994	634,778	1,316,772	328,456	326,480	654,936	276,008	256,075	532,083	54,770	43,664	98,434	22,760	8,559	31,319
Kedah	477,626	459,199	936,825	317,134	318,153	635,287	98,078	90,929	189,007	47,889	40,999	88,888	14,525	9,118	23,643
Kelantan	341,322	343,232	684,554	310,186	316,454	626,640	19,821	18,212	38,033	4,807	3,364	8,171	6,508	5,202	11,710
Malacca	207,952	208,843	416,795	101,054	109,585	210,639	84,298	79,915	164,213	18,184	15,561	33,745	4,416	3,782	8,198
Negri Sembilan	266,128	251,323	517,451	109,515	110,083	219,598	106,648	100,341	206,986	41,860	36,260	78,120	8,105	4,639	12,744
Pahang	223,531	208,216	431,747	124,136	121,933	246,069	78,376	70,022	148,398	17,341	14,482	31,823	3,678	1,779	5,457
Penang	287,438	373,756	761,194	108,729	111,208	219,937	217,297	216,628	433,925	51,361	39,510	90,871	10,051	6,410	16,461
Perak	844,576	812,409	1,656,985	332,651	333,634	666,285	364,633	357,311	721,944	129,889	112,621	242,510	17,403	8,843	26,246
Perlis	60,036	58,951	118,987	45,474	46,132	91,606	11,141	10,254	21,395	1,280	887	2,167	2,141	1,678	3,819
Selangor	740,932	690,775	1,431,707	216,697	210,192	426,889	345,260	333,051	678,311	149,605	128,871	278,476	29,370	18,661	48,031
Trengganu	190,373	191,909	382,282	174,159	178,976	353,135	12,321	10,804	23,125	3,107	1,632	4,739	786	497	1,283
West Malaysia	4,421,908	4,233,391	8,655,299	2,168,191	2,182,830	4,351,021	1,613,881	1,545,542	3,157,423	520,093	437,851	957,944	199,743	69,168	188,911
Sabah(2)			590,660												
Sarawak(2)	458,354	444,487	902,841	81,049	81,973	(a)163,022	155,140	141,837	296,977	-	-	-	222,165	220,677	(b)442,842

\+ includes aborigines and Indonesians in West Malaysia.

(1) Change of identity cards is estimated from the number of persons who have surrendered West Malaysia identity cards for Singapore ones and Vice versa.

(2) Estimated Population + Migration surplus + Excess of births over deaths.

(a) Excludes Indonesians

(b)

Others Includes	M	F	T
Melanaus	25,643	25,951	51,594
Ibans	130,454	131,323	261,777
Land Dayaks	37,465	37,601	75,066
	193,562	194,875	388,437

Source:

Department of Statistics

APPENDIX II

POPULATION STATISTICS - EAST MALAYSIA
ESTIMATED POPULATION BY RACE AND SEX AS AT 30TH JUNE, 1967
ESTIMATED POPULATION AT END 1966 + EXCESS OF BIRTHS OVER DEATHS + MIGRATIONAL SURPLUS

Race / Sex — Sabah	All Races			Chinese			Kadazan			Murut			Bajau			Other Indigenous			Europeans			Others(1)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Tota
30th June, 1967	312,227	278,433	590,660	68,283	61,985	130,268	87,988	87,919	175,907	12,944	12,915	25,859	34,929	34,068	68,997	53,666	51,698	105,364	1,249	1,082	2,331	53,168	28,766	81,9

Race / Sex — Sarawak	All Races			Melanaus			Ibans			Land Dayaks			Malays(2)			Chinese			Others(3)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
30th June, 1967.	458,354	444,487	902,841	25,643	25,951	51,594	130,454	131,323	261,777	37,465	37,601	75,066	81,049	81,973	163,022	155,140	141,837	296,977	28,603	25,802	54,505

(1) Includes Malays, Indians and Pakistanis.

(2) Excludes Indonesians.

(3) Includes Europeans, Bisayahs, Kedayans, Kayans, Kenyaha, Kelabits, Dusuns, etc.

R. Chander,
Chief Statistician,
Malaysia.

APPENDIX III

POPULATION STATISTICS - SARAWAK
ESTIMATED POPULATION BY RACE, SEX AND DIVISION AS AT 30TH JUNE, 1967*
(ESTIMATED POPULATION AT 31/12/66 + MIGRATIONAL SURPLUS + EXCESS OF BIRTHS OVER DEATHS)

Number of Persons

Division \ Race / Sex	All Races			Melanaus			Ibans			Land Dayaks			Malays (1)			Chinese			Others (2)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
First Division	161,981	156,265	318,245	233	214	447	12,407	12,063	24,470	36,959	37,225	74,184	43,010	43,599	86,609	65,436	59,668	125,104	3,936	3,496	7,432
Second Division	63,639	63,026	126,665	84	26	110	38,970	40,159	79,129	111	94	205	15,821	16,005	31,826	8,508	6,632	15,140	145	110	255
Third Division	155,527	153,504	309,031	21,660	22,145	43,805	58,742	60,345	119,087	191	135	326	7,926	8,031	15,957	63,105	59,680	122,785	3,903	3,168	7,071
Fourth Division	59,173	54,233	113,406	3,640	3,551	7,191	18,148	16,840	34,988	182	135	317	7,648	7,545	15,193	16,021	14,017	30,038	13,534	12,145	25,679
Fifth Division	18,034	17,459	35,493	26	15	41	2,187	1,916	4,103	22	12	34	6,644	6,793	13,437	2,070	1,840	1,910	7,085	6,883	13,968
Sarawak	458,354	444,487	902,841	25,643	25,951	51,594	130,454	131,323	261,777	37,465	37,601	75,066	81,049	81,973	163,022	155,140	141,837	296,977	28,603	25,802	54,405

Source: Department of Statistics, Sarawak.

(1) Excluding Indonesians

(2) Including Europeans, Bisayahs, Kedayans, Kayans, kenyahs, Kelabits, Dusuns, etc.

* Late registration of births and deaths has been included.

APPENDIX IV

SOME DEFINITIONS

1. WORKING POPULATION

(a) In Employment - includes all persons who have been gainfully occupied for at least four months out of the preceding twelve months, and part time workers who average at least three hours of work a day. Housewives and other unpaid houseworkers are excluded.

(b) Not Working but Looking for work refers to persons who have been in employment for less than four months of the preceding twelve months but who have been actively looking for work for at least six of the twelve months.

(c) Economically Active Population - includes all persons in category (a) and (b).

(d) Non-economically Active Population - comprises homemakers (Housewives and other relatives), students, persons in institutions, income recipients who are not employed or unemployed, and all other persons not included in the economically active population.

(e) Industry - The kind of trade or business in which the person enumerated has spent most of his time in the previous twelve months.

(f) Occupation - The kind of work or the nature of the duties on which the person enumerated has spent most of his time in the preceding twelve months. The same occupation may be found in several industries. For example, a driver may work in the rubber industry, or for a building contractor, or in the oil industry, or for the government. Similarly in the same industry there may be several occupations, for example, tappers, drivers, clerks, motor mechanics etc., in the rubber industry.

2. OCCUPATIONAL STATUS

(a) Self-employed Persons - Those who run their own business, estate or smallholding, either on their own account or with the help of persons they employ.

(b) Unpaid Family Worker - Persons "in employment", who work without pay in enterprises operated by another member of the household.

(c) Employee - Persons who work for others and receive renumeration in wages, salary, commission, tips, piece rates, in kind, or who work in the "kongsi" under the general direction of someone else.

(d) An Employer is a person who engages one or more persons other than members of his own household for operating his own enterprise. A person is not an employer mainly by engaging domestic servants.

(e) An own account worker is a person who does not engage an employee in his own enterprise.

(f) A Family worker is a person who works with or without pay in an enterprise operated by another member of his/her own family.

SOURCE

(1) Population Census of the Federation of Malaya, 1957. Report No. 14 - By H. Fell, Department of Statistics, Kuala Lumpur.

(2) Jones L.W., Reports on the Censuses of Population of Sabah and Sarawak, 1960.

(3) United Nations "Handbook of Population Census Methods" Vol. II, "Economic Characteristics of the Population," (New York, 1958), p.5.

APPENDIX V

RETURNS OF INVESTMENT IN POPULATION CONTROL COMPARED TO RETURNS IN ALTERNATIVE INVESTMENT

			$
Target Investment[1]	: 1985	-	5,620 Million
Investment	: 1965	-	1,715 Million
Total Investment	: 1965-1985	-	3,905 Million
Annual Investment	: 1965-1985	-	195.25 Million
Annual Output attributed to investment of			
$3,905 Million at 10% rate of Return		-	10/100 x 3905
		=	390.5 (ΔV)
Gross National Product in 1965		=	8.729 (V)
Proportionate change in yearly National Output		:	390.5/8729
		=	0.04475 ($\Delta V/V$)
Assuming that $195.25 Million is instead invested in Population Control at $20 per participant. Therefore, number of participants		-	9,760,000
Given fertility rate of 0.15 infants a year of average woman participant. Therefore, reduction in births over 20 years		-	1.464 Million (ΔP)
Population in 1965		-	9.411 Million (P)
Proportionate Change in national population		-	0.1556 ($\Delta P/P$)
Superior effectiveness of birth reduction over output expansion		-	$\frac{\Delta P/P}{\Delta V/V}$

---

[1] First Malaysia Plan, p. 64.

$$= \frac{V\Delta P}{P\Delta V}$$

$$= 0.1556/0.04475$$

$$= 3.476 \text{ times}$$

BIBLIOGRAPHY

1. Barclay, George W. - Techniques of Population Analysis, (New York, John Wiley and Sons Inc. London, 1952).

2. Belshaw, Horace - Population Growth and the Levels of Consumption. With Special Reference to countries in Asia (London, Allen and Unwin, 1958).

3. Caldwell, J.C. - "Malaysia's Population Problem" Asia's Population Pattern edited by Chandrasekar S. (George Allen and Unwin, Ltd. London).

4. Caldwell, J.C. - The Population of Malaya (Thesis submitted for the degree of Dr. of Philosophy at the Australian National University, 1962).

5. Coale, Ansley J. and Hoover, Edgar M. - Population Growth and Economic Development in Low Income Countries (Princeton University Press, 1966).

6. Croxton, Frederick E. and Crowden, Dudley J. - Applied General Statistics (2nd edition, Prentice Hall of India, 1966).

7. Ehrlich, Paul R. "World Population - Is the Battle Lost?" Reader's Digest (March 1969).

8. Enke - "Economic Aspects of Slowing Population Growth", Economic Journal (March, 1966).

9. _____, Estimates of Population for West Malaysia (1967) (Department of Statistics, Malaysia, Kuala Lumpur, 1969).

10. Fell, H. - 1957 Census of the Federation of Malaya. Report No. 14. (Department of Statistics, Federation of Malaya, Kuala Lumpur).

11. _____, First Malaysia Plan, 1966-1970 (Government Printers, 1965).

12. _____, Food Balances for Twelve Countries in the Far East and Oceania, 1959-1961. (Foreign Regional Analysis Division Economic Research Service, United States Department of Agriculture.)

13. Ginsburg, Norton and Roberts, Chester, F. - Malaya (Seattle, 1958).

14. Hamzah Sendut - "Patterns of Urbanization in Malaya" Journal of Tropical Geography, Vol. 16 (1962).

15. Hanson, J.L. - A Textbook of Economics (3rd edition, Macmillan and Evans, Ltd. London, 1961).

16. Higgins, Benjamin - Economic Development Principles, Problems and Policies (Constable and Co. Ltd., London 1959).

17. Jackson, R.N. Immigration Labour and the Development of Malaya, 1786-1920 (Government Press, Federation of Malaya, 1961).

18. Jones, L.W. - North Borneo: Report on the Census of Population taken on 10th August, 1960. (Kuching, Government Printing Office, 1962.)

19. Jones, L.W. - Sarawak: Report on the Census of Population taken on 15th June, 1960. (Kuching, Government Printing Office, 1962.)

20. Jones, L.W. - The Population of Borneo: A Study of Sarawak, Sabah and Brunei (London Athlone Press, 1966).

21. Lim Chong Yah - Economic Development of Modern Malaya (Oxford University Press, Kuala Lumpur, 1967).

22. Ma, Ronald and You Poh Seng - "The Economic Characteristics of the Population of the Federation of Malaya, 1957", Malayan Economic Review, Vol. V, No. I (April, 1960).

23. Mabbet, Hugh - "At a glance - Facts on Farming and Forestry". The Straits Times 14th March, 1969. (The Straits Times Press).

24. Malaysian National Family Planning Board Annual Report, 1967.

25. Malaysian National Family Planning Board - Monthly Progress Report, December, 1968.

26. Malaysian National Family Planning Board - Report on the West Malaysian Family Survey, 1966-67.

27. Malaysian National Family Planning Board - Supply Programme 20th November, 1968.

28. _____, Malaysian Socio-Economic Sample Survey of Households, 1967/68. Provisional Data on Employment and Unemployment (Department of Statistics, Kuala Lumpur).

29. Meir, G.M. - Leading Issues in Development Economics, Selected materials and commentary (Oxford University Press, 1964).

30. Ness, G.D. - "Population Growth and Economic Development", Journal of Tropical Geography.

31. Noakes, J.L. - Sarawak and Brunei: A Report on the 1947 Population Census (Kuching, Government Printing Office, 1950).

32. Ohkawa, K. - "Economic Growth and Agriculture", Annals Hitotsubashi Academy, (October, 1956).

33. Ohlin, Gohran - Population Control and Economic Development (Development centre of the organisation for Economic Cooperation and Development, Paris, 1967).

34. Osborne, Frederick - "Population: An International Dilemma", A Survey of Proceedings of the Conference Committee on Population Problems, 1956-1957 (New York, 1958).

35. _____, Population and Related Questions in Asia and the Far East. (Demographic Training and Research Centre, Bombay).

36. _____, Population Increase and Economic Development in Asia, (Institute of Asian Economic Affairs. Institute of Advanced Projects East-West Centre).

37. _____, "Population Trends and Related Problems of Economic Development in the ECAFE Region". Economic Bulletin for Asia and the Far East (Volume IX, No. 1, June 1959).

38. Purcel, Victor - The Chinese in Malaya (Oxford, 1958).

39. _____, Report on the Higher Education Planning Committee (Kuala Lumpur, Malaysia, 1967).

40. Rowan, C.T and Mazie, David - "The Great Famine that Wasn't", The Reader's Digest (September 1968).

41. Sandhu, Kernial Singh - "The Population of Malaya: some Changes in the Pattern of Distribution between 1947 and 1957", Journal of Tropical Geography (Vol. 15, 1961).

42. Sarkar, N.K. - "Population Trends and Population Policy in Ceylon", Population Studies (Vol. 9, 1955/1956).

43. Saunders, Lyle - Population and Welfare in Malaya (Ford Foundation, Kuala Lumpur).

44. Saw Swee Hock - The Population of Singapore and its Social and Economic Implications (Thesis submitted for the degree of Master of Arts, University of Singapore, 1960).

45. Silcock, T.H. - "Economic Potential of Malaya", Readings in Malayan Economics (Singapore, 1961).

46. Smith, T.E. - Population Growth in Malaya. An Analysis of Recent Trends (Oxford University Press, 1952).

47. _____, Singapore Annual Report, 1958.

48. Straits Times, The - "A Blueprint for Village Factories" (The Straits Times Press, 27th June, 1969).

49. Straits Times, The - "Rural Revolution" (Straits Times Press, 31st March, 1969).

50. Stys, W. - "The Influence of Economic Conditions on the Fertility of Women", Population Studies (Vol. II, 1957/1958).

51. Thapar, Savitra - "Family Planning in India", Population Studies (Vol. 9, 1955/1956).

52. United Nations - Demographic Aspects of Manpower. Report No. I.

53. United Nations - Demographic Yearbook (Editions: 1948, 1954 1958, 1959 and 1960).